

AMERICAN BEE JOURNAL

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American Bee Journal



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American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

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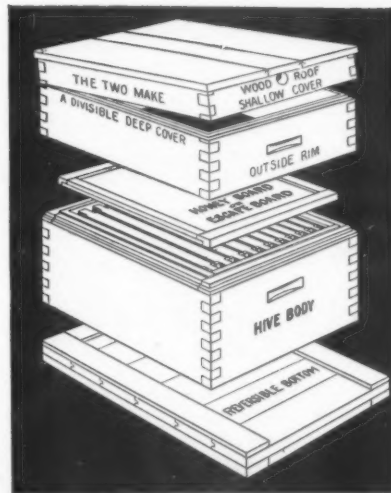
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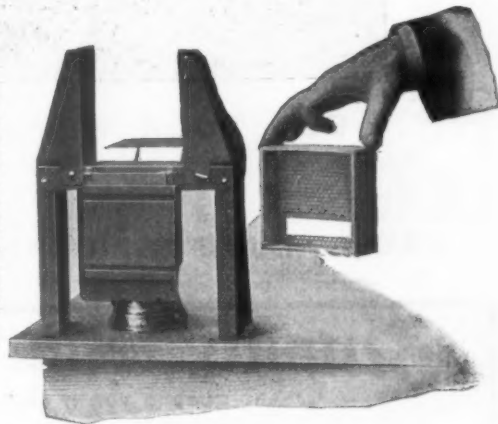
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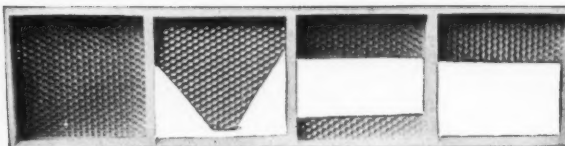
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Untested.....	\$1.00	\$5.00	\$ 9.00	\$.80	\$4.75	\$ 8.50
Tested.....	1.75	9.00	17.00	1.50	8.00	15.00
Select tested.....	2.75 straight			2.50 straight		

Write for breeders—\$4.00 and up.

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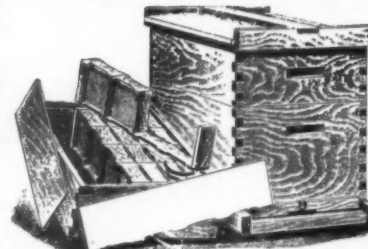
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Admits fresh air into the hive, lessening the chance of swarming, and giving renewed energy to the bees.

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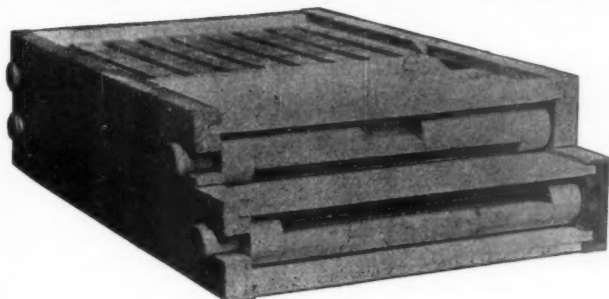
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1. It allows feeding during any time of the day or year—at mid-day or in mid-winter.
2. It controls the mating of the queen so that mismating is prevented.
3. It settles the robber bee question as the roller can be quickly turned to bring the small entrance into position.
4. It sifts automatically undesirable drones out of the hive, and cages them in the drone trap.
5. It permits ample ventilation at the height of the honey-flow.

6. It can be instantly closed when moving bees in and out of cellars or from one yard to another.
7. It permits undesirable queens to be sifted out by screening the bees through the wire entrance.
8. It prevents swarms from going to the tops of trees or away to the woods when the beekeeper is away.
9. It practically eliminates swarming, as the colonies usually show no inclination to swarm. Why, I do not know.
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	1	6	12	1	6	12	1	6	12	1	6	12
Untested.....	\$1.50	\$7.50	\$13.50	\$1.25	\$6.50	\$11.50	\$1.00	\$5.00	\$9.00	\$.75	\$4.00	\$7.50
Select Untested	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested.....	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select Tested....	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	10.00	18.00

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QUICK SHIPMENT OF QUEENS



of 3-band stock reared for honey-gathering qualities

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Send your orders now and be assured of having queens when you want them. **R. A. SHULTS, Cosby, Tenn.**

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Lewis Quality Which means that all Lewis Hives are made out of clear white pine, and Lewis Sections made out of fine white basswood. Material in these goods is the best obtainable, selected by experts.

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Manufacturers of Beeware,
Watertown, - - - Wisconsin



(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at \$1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., APRIL, 1914

Vol. LIV.—No. 4

EDITORIAL COMMENTS

Educational—Honey-Bee Tablet

We are in receipt, from the New York State Association of Beekeepers' Societies, of a writing tablet for school use showing on its cover the queen, worker and drone, with an explanation on the verso or underside of cover, giving a brief natural history of the bee, a description of the nature of honey, etc. We would suggest that to it be added a few facts concerning the usefulness of bees in fertilizing flowers and an explanation of the impossibility of their damaging sound fruit, owing to the peculiar shape of their mandibles.

The spreading broadcast of useful information on bees in this manner is sure to bear fruits and to increase the demand for honey. Such primary methods of teaching facts should be encouraged, and we cannot commend them too highly. The New York State beekeepers are working efficiently at small cost.

A New German Bee-Book

We are indebted to the author for a copy of a text-book in the German language entitled, "Die Biene und der Breitwabenstock" (The Bee and the Wide Frame Hive). It contains 175 pages, with more than 100 illustrations, is written by Franz Richter, the writer of the *Rundschau in Bienen-Vater*, and can be obtained for 50 cents by addressing the author at Vienna, X., Kolumbusgasse, Nr. 1.

It is the first German book, the author claims, frankly to advocate Ameri-

can plans, and pleasantly resembles American books by being printed in the same type instead of using the German type. In Germany, a hive with frames measuring more vertically than horizontally is called *Hochwabenstock* (high-frame-hive), and one with frames measuring more horizontally than vertically is called *Breitwabenstock* (wide-frame-hive); hence the name in the title. The frame in the Richter hive is the Austrian standard: .84 inch shorter than the Langstroth, and .92 inch deeper. Richter quotes Dadant as saying that the Langstroth frame is too shallow, and says that this is remedied in the Austrian frame.

Mr. Richter makes a pretty big claim for his hive when he says a colony in it will store four times as much as in a *Vereinsstaender*, the tall hive largely used in Austria.

In this country the 10-frame Langstroth hive is made so narrow that it will not admit a dummy. The Richter hive not only admits one dummy, but two, one at each side. Score one for the Richter hive.

On page 120 occurs this passage: "The combs should not be too old nor too black, since colonies with such combs are late about developing in spring." One cannot help wondering on what ground such a statement can be made. The book should have a good sale.

Doctor Carton on Foulbrood

The readers will find among our contributions a lengthy and very interest-

ing article on the above subject. Dr. Carton, whose portrait we also produce, is the well-known author of several learned books on clinical and bacteriological subjects, probably the most notable of which is entitled, "La Tuberculose Par Arthritisme." He is a pupil of Pasteur, the most wonderful bacteriologist of modern times. He has written a work in which he asserts that the "three deadly aliments" are alcohol, meat and sugar. The Editor met him in Europe, and received from him a promise to give our readers his ideas concerning "foulbrood." He is a beekeeper and interested in those questions. Probably few of our readers will entirely agree with the opinions expressed, but they will notice that Dr. Carton advises just the methods followed in America, and deprecates the use of drugs. In this we will agree with him.

Doctor Miller, who has read the Carton article, has this to say about it:

It is well that attention should be called to the importance of keeping bees in the best physical condition so that they may resist the encroachment of malign influences, and especially is it well to call attention, as Dr. Carton does, to the danger of substituting sugar for honey as food for bees. He speaks of the "noxious" effect of sugar. He hardly means by that that sugar contains elements actively poisonous, but rather that sugar has a negatively noxious influence because of its lack of certain elements, as iron, which, although present in honey in minute proportion, are exceedingly important.

Upon one point practical beekeepers will probably not agree entirely with what they will be likely to understand as Dr. Carton's view. He does not say so in so many words, but it sounds a good deal as if he said: "The germs of foulbrood are present everywhere, resisted by colonies of sufficient vigor, but ready at any time to pounce upon and destroy all colonies in a weakened

American Bee Journal

and debilitated condition." It is undoubtedly true that many germs, both good and bad, are to be found everywhere, but are the germs of foulbrood thus omnipresent?

For many years after the honey-bee was introduced into this country foulbrood was unknown. Is it believable that during all that time germs of the disease were alertly on the watch without ever finding a single colony anywhere in such poor condition as to allow them to effect an entrance?

Take a specific instance, the case of one of the veterans who began bee-keeping many years ago. During all his experience of many years he had no personal knowledge of foulbrood. Then came years when he knew it was in the land, appearing here and there, but not in his neighborhood. Then it came to his knowledge that the disease was within a few miles of him, and a few years ago he found it in his own apiary. He had been on the alert for it; his colonies were in good condition; yet there it was, in good, strong, previously healthy colonies. It is incredible that during the years of his novitiate there should never have been a colony in such poor condition as to offer an abode to those villainous germs prowling everywhere, and that such an abode could only be found after many years of waiting until the value of strong, healthy colonies had been fully learned, and that such colonies not until then offered a welcome to the miscreants.

As already said, it is just possible that Dr. Carton may not have meant what he appears to mean, and it is well to warn the inexperienced that he should put no false trust in the best sanitary care of his colonies, but watch even the strongest for the appearance of the foe.

The Weed Flora of Iowa

We have under our eyes Bulletin No. 4 of the Iowa Geological Survey, with above title. The book is very exhaustive, and contains over 900 pages, with 40 pages of index, numerous engravings, considerations on the structure of seeds, flowers, leaves and roots, the injuriousness of weeds, their migrations, weed and seed laws, etc. It is the work of Dr. L. H. Pammel, the eminent professor of botany at Ames, and author of a "Manual of Poisonous Plants."

This appears to be a very thorough work, and the cuts are excellent. There is but one thing for which we might be sorry concerning this most useful treatise. It is that the usefulness of such weeds as produce honey has not been taken into account, the only mention that he have seen of honey production from weeds being in regard to sweet clover, to which Dr. Pammel renders full justice. We notice that he places golden-rod on a parity with ragweed as to the baneful influence of its pollen on hay-fever sufferers.

We suggest that an additional study

of the weed flora in regard to the usefulness of the honey and pollen production would be exceedingly interesting. It might also be published in the form of a bulletin. In the fight against weeds, it is well that we should separate those which prove useful in honey production from the thoroughly injurious ones like the ragweed. It remains for eminent workers like Dr. Pammel to give the country this additional information, and it is to the interest of the farmers that it be done.

Fastening Foundation with Putty Knife

C. B. Palmer writes: "I have been using this style of fastening for two seasons, and find it very good. We take the foundation and lay it on the section, dip a short, stiff putty-knife in common Karo white syrup, and press the foundation into the wood; the syrup prevents the knife from sticking to the foundation, and the Karo hardens at the edge of the foundation, and seems to make a tight and smooth joint. (Do not get the syrup under the foundation.)"

Mr. Palmer sends a sample, which shows a nice, straight job. The use of the putty-knife for fastening foundation in sections was superseded by the Parker fastener, which did at a single stroke what the putty-knife did at several strokes. Then the hot plate drove out the Parker. Yet the old method of fastening still comes nicely in play when in the apiary a section happens to be found in which a starter has fallen down; only in that case instead of a putty-knife the flat blade of a hive-tool is generally used, because more convenient, and for the same reason honey is used instead of Karo. Besides, it seems a sort of insult to the bees to offer them glucose, even in so very small quantity.

Making Honey Labels Stick

In the March number Dr. Miller stated that he had trouble with making labels stick on tin. We have since received several letters suggesting remedies for this, nearly all of them recommending the addition of a small amount of honey to the paste. Mr. E. S. Miller, of Indiana, writes:

"This is a problem that bothered me for a long time. By experimenting I finally found that by scouring the surface of the tin the labels would stick. Later I learned how to make paste that would stick without scouring. Use plenty of water in making a thin paste of flour or starch. Boil slowly and evenly. When partly boiled down add two tablespoonfuls of honey to each

teacup of the paste. Continue to boil until thick. Use while fresh."

Mr. Parison, of California, suggests the addition of a small amount of fish glue instead of the honey. He also gives the formula for making a paste that will keep any length of time:

"Mix two tablespoonfuls of corn starch to $\frac{1}{2}$ pint of cold water. Add one teaspoonful of fish glue and $\frac{1}{4}$ tablespoonful of lye that has been liquefied in water. Cook until thick, stirring vigorously to avoid lumps. If it does not thicken properly, add a little more lye. This paste will not sour or smell."

NOTE.—If honey is used in the paste, care should be taken to use white honey, as a darker honey may discolor the label.

A Honey Day

One of the interesting points brought out at the February meeting at St. Louis, was the possibility of establishing a national "honey day" in which people would be urged to eat honey. Mr. Geo. W. Williams, of Redkey, Ind., said that Dec. 15 had been designated in Indiana as a "honey day." In a private letter to the Editor, he stated that in his opinion this helped to move some 40 tons or more of honey than would have otherwise been sold in the State. There is no doubt that a National Honey Day would help honey sales considerably. Let our beekeepers agitate this subject.

Foulbrood vs. Foul Brood

Some time ago we received the following from Dr. Miller, regarding whether "foulbrood" should be spelled as two words or one:

"When a man sees a bird of any kind which is black in color, we say, 'He saw a black bird,' writing the two words separately and putting the emphasis on 'bird.' If he uses the same two words to name a particular bird that he saw (a grackle), putting the emphasis on 'black,' then we unite the two words into one, and say, 'He saw a blackbird.' Same with blackberry, greenhouse, etc. In some cases there is an intermediate stage, and hyphen is used between the two words, but sooner or latter the hyphen is usually dropped, and the two words written as one. By analogy, when we use the words 'foul' and 'brood' to name a certain disease, putting the emphasis on 'foul,' we should write 'foulbrood,' and not 'foul brood.' If healthy brood is taken from a hive and left to decay, there will in time be foul brood, but no foulbrood. It would be well if this form should be used in all bee literature."

Just when is the proper time to drop the hyphen is hard to tell. For instance, bee-keeping is considered correct, yet it should be a word of com-

American Bee Journal

mon enough usage so that the hyphen may be omitted. We have omitted it in our columns for some time past. There is a tendency at present to omit the hyphen either by making separate words of the parts or by making all one word. Hereafter foul brood will be written as one word by us.

California Beekeeping

The American Bee Journal has recently made arrangements for a monthly contribution from the "Golden State." If the articles prove as "pleasant" as the name of our correspondent, everybody will be pleased. The first contribution is in the present issue.

method you may have. Space and tables will be provided.

A special invitation is extended to fruit growers to attend.

L. WAYNE ADAMS, Sec.

Amendments to New Zealand Act.—

In 1908 and 1909 Mr. Isaac Hopkins, Government Apiarist for New Zealand, recommended amendements to the foul-brood law in order that the good work which had been accomplished might not be nullified. These recommendations have but lately been adopted and made a part of the law. Some of the more important of the new features are: compulsory annual registration of all apiaries, strict supervision over imported bees and appliances, periodical inspection of queen-rearing apiaries, and prohibition of selling queens from apiaries in which foulbrood exists.

The inspectors of the province are supplied with motor cycles so as to facilitate their work.

Death of Alexander Schroeder.—

We regret to report the death of Mr. Alexander Schroeder, which occurred in Trieste, Austria, during the early part of February. Mr. Schroeder was an expert linguist and an extensive traveler. Some of our older readers will probably recall contributions from him which appeared in the American Bee Journal from time to time.

Our Front Cover.—

On our cover page we give a photograph of the apiary of H. Adams, of New Mexico. This apiary consists of 160 colonies, the hives being arranged in clusters of 9, 3 facing in each direction. Mr. Adams states that this arrangement allows him to work with 9 hives without much

MISCELLANEOUS NEWS · ITEMS

Percentage of Germination in Sweet Clover Seed.—Our attention has been called to the fact that many people when ordering sweet clover seed of seed houses and elsewhere, will insist in their letter that the germination of the seed should be at least 80 percent.

It is interesting to note in this connection just what actual tests will prove with the average run of seed. Prof. J. G. Mosier, in the *Prairie Farmer* for Feb. 15, says:

"As a general rule sweet clover seed does not give a high percentage of germination because of the dense seed coat through which the moisture cannot penetrate readily. These are what is known as hard seeds. Nearly all seed contains considerable quantity of these hard seeds that do not germinate the first year.

"At the Ohio Experiment Station the average percent of germination of 37 samples tested by the botanical department was 29.14. This poor germination may be largely overcome by treating the seed with concentrated sulphuric acid for half an hour."

Favorable Prospects—Small Losses.—

Late winter reports coming in after most bees have had at least one good flight, indicate that losses in bees have been extra light so far, and that the bees should be in good condition for spring. Floods have done considerable damage in California, but prospects never were better for a good honey crop, and some of the older beekeepers are predicting a banner yield.

Texas floods have also subsided, and a season at least good enough to offset the failure of last year is expected.

The West reports few losses and excellent prospects, while in the central and eastern States, although bees are coming through in good shape, it is doubtful if the crop will be as good as 1913.

In our own locality clover seems scarce. Bees have wintered finely. Out of three apiaries totaling over 200 colonies, so far inspected, there is not a

single colony lost, and the most of them are fairly well supplied with stores.

Connecticut Meeting.—The 23d annual meeting of the Connecticut Beekeepers' Association will be held at Hartford, Saturday, April 18, 1914. Sessions 10:30 a.m. and 1:30 p.m.

Dr. Herbert E. Stockwell, of Stockbridge, Mass., ex-president of the Berkshire County Beekeepers' Association, will address us upon the subject of "The Theory and Significance of Immunity; i. e., of Resistance to Disease as Applied to Bees."

Other features of the program are: "How to save money in buying hives and fixtures;" "Every man his own inspector;" latest methods of treatment, with demonstrations by Inspector Yates. Inspector Coley will open discussion upon the subject. "Management of a comb-honey apiary to prevent swarming," by L. C. LeMay.

Discussion—"Smoke introduction of queens." "Advantages of a let-alone hive and how to manage." Demonstration by Allen Latham. "Comparative merits of 8-frame and 10-frame hives for comb honey in localities of Connecticut," A. W. Coley.

Please bring for display and demonstration any invention, implement or



APIARY OF J. B. HOLLOPETER, AT PENTZ' PA.

American Bee Journal

change of position and without getting in front of a single colony. It also has the added advantage that young queens returning from their mating flight are less liable to get lost by entering the wrong hive.

Visit from A. H. Fralick.—We acknowledge a visit from Mr. A. H. Fralick, veteran beekeeper of Homer, Minn., on his way home after having spent the winter in Florida. Mr. Fralick has purchased property near Bradentown, Fla., and expects to spend his winters there, but he prefers the North when it comes to keeping bees and getting honey.

A Curious Use of Honey.—Mr. J. Es-card, in the *Revue Scientifique*, cites the curious use of honey made, in the Palatinate, by the gem-cutters. In this region, where gem-cutting establishments are numerous, the agates, called bathed agates, are prepared as follows: After washing and drying them, they are placed in a solution of honey in which they are left for a long time. The liquid penetrates slowly into the fissures according to the porosity of the stones. When the imbibing is sufficient, the stones are washed and put into a bath of concentrated sulfuric acid. This acid slowly burns out the honey and produces carbon residues which pleasingly marble the agates.—*Revue Française d'Apiculture*.

Death of Aaron Snyder.—Mr. Aaron Snyder, a noted New York beekeeper, of Kingston, died on March 3, 1914, in his 71st year, of cancer.

He began keeping bees when he was 16 years old, and continued until his death. In 1889, he moved from Albany Co., N. Y., to the city of Kingston; here he continued to run from four to five apiaries, one being at his home on the edge of the city, and the others



WINTER VIEW OF THE HOLLOPETER APIARY.
Hives in pairs are usually packed in one case.

within driving distance, from 2 to 6 miles away.

Mr. Snyder was a good practical apiarist. He had an inventive mind and made many changes, and used many kinds of hives. Within the last few years he produced mostly comb honey, but lately changed to extracted with success.

His choice of hive was a 9 or 10 frame hive with extracting supers half the depth of the hive. He believed in selling his own honey. He kept agents on the road as salesmen, and bought honey in addition to what he produced himself to supply his customers. He put his honey up in 1-pound bottles and 5-pound pails.

At one time Mr. Snyder had foulbrood, as had all of his neighbor beekeepers for miles around. Mr. Snyder sent for me, and I went and helped him and his neighbors to get cleaned up. Some, of course, lost their bees. Mr. Snyder was one who cleaned up and saved almost all of his bees, and there is not much foulbrood around there now. He has since thought well

of bee-inspectors, and often expressed his appreciation of the work that the State has been doing for the beekeeping fraternity.
N. D. WEST.

Cyprian Queens.—We have several enquiries from subscribers asking where they can obtain Cyprian queens. Any one who can furnish the pure stock will confer a favor to our subscribers by letting it be known.

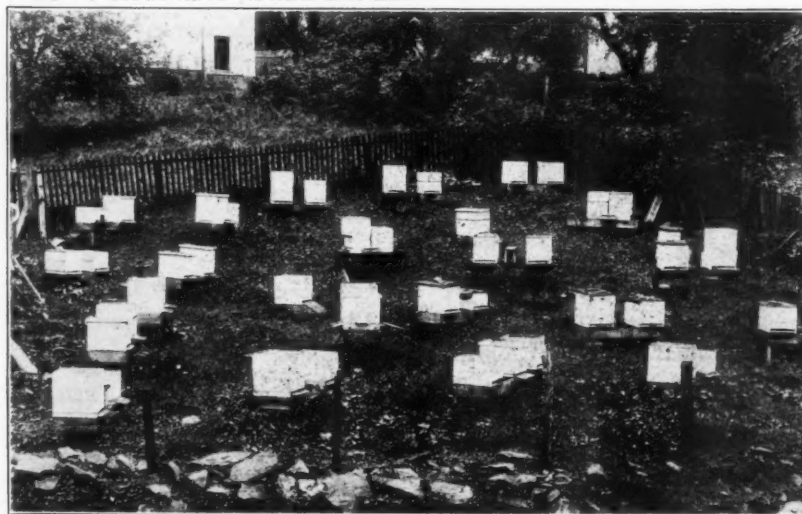
Meeting of the Kansas Beekeepers

The Kansas State Beekeepers' Association is growing in importance. At its meeting of Feb. 26-7, which was attended by our Editor, a number of important subjects were discussed, chief among which is foulbrood. This disease is bringing beekeepers closer together, and proves the truth of the old adage: "It is an ill wind turns none to good."

Professor Geo. A. Dean, Entomologist of the Kansas Agricultural College at Manhattan, read an able paper on "Insect Enemies and Diseases of Bees."

We are glad to be able to say that from the consensus of opinion there is less disease now in Kansas than formerly. But a unanimous desire was expressed to secure an appropriation for the continuation of the work of inspection. In this State as elsewhere beekeepers are convinced that the most good can be done by inspectors from an educational standpoint. Suggestions are more effective than compulsion, and there is but little difficulty in convincing rational men that it is to their interest to eradicate the disease as promptly as possible. The main requirement is to show them how this is done.

A few facts peculiar to Kansas were brought out. Alfalfa growing is said to be spreading very fast over the State, and it has been repeatedly proven that a good crop of seed may be secured from it only when bees are nu-



ANOTHER VIEW OF MR. HOLLOPETER'S APIARY—COLONIES ARE ARRANGED IN PAIRS.

American Bee Journal

merous in the vicinity. This is not a new fact, but it is well to repeat it.

The lack of hollow trees in this prairie country for the harboring of runaway swarms, was set in evidence by the report of C. M. Randall, of Topeka, who removed 63 swarms from the walls of frame houses in one year. As many as 3 swarms were removed by him from a single house.

Mr. Wayland Dunham, a high school student, read a very interesting essay on "Bees and Beekeeping."

Dr. Bohrer's essay on "Foulbrood," caused much comment, for it covered the ground fully. Dr. Bohrer is now 81 years old, and the oldest living member of the National Association, of which he is a charter member.

The officers elected are: O. S. Mullin, president; C. S. Kistler, vice-president; O. A. Keene, secretary-treasurer.

Prof. Dean, the State Entomologist, assured the members that an effort would be made to organize a class in beekeeping at the Agricultural College.

A photograph of the meeting was taken; rather too late, however, as a number of members had already left. We give it in this number.

All Kansas beekeepers desirous of joining this association are requested to write to the secretary, O. A. Keene, 1600 Seward Ave., Topeka.

Obituary—F. B. Cavanagh

Fred B. Cavanagh was born Dec. 19, 1880, and died at his home in Hebron, Ind., Feb. 12, 1914. His father died in 1904, leaving his mother with three brothers and three sisters to survive. With them the widow remains to mourn his death.

When but a boy he became interested



THE LATE F. B. CAVANAGH.

in bees, and decided to take up beekeeping as a life work. Imbued with active energy, he made the bees pay his way through a college course so that he might be better fitted for a business success.

Mr. Cavanagh then took up bee-keep-

ing in Michigan. In 1906 he was married to Miss Mabel Wilbur. In 1908 they moved to Hebron, Ind. Here the business rapidly grew until at the time of his death he owned and operated nearly 500 colonies of bees.

In all his undertakings Mr. Cavanagh was thorough. He experimented with different methods of wintering until he found the one best fitted to his needs, then stuck to this. He was one of the first to advocate the automobile for

out-yards, using in connection a trailer for hauling supers, etc. Later an auto truck was used.

Throughout his business career he made many friends and gained the confidence of his acquaintances by his honesty and industry.

Mrs. Cavanagh will not endeavor to continue the business, but is offering for sale bees, supplies, and everything connected with the extensive business of her late husband.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

The Season's Outlook

In many locations in south Florida bees were swarming the first of March, but it is different outside of this section of Dixie. The progress in brood-rearing or building up for the first flow is from two to three weeks behind that of average seasons, due to the extreme cold weather which has continued for 30 days.

Up to this time bees seemed to be making the usual progress, but steady cold winds, snow, sleet, rain and ice and freezing weather have put and end to this progress, for the bees have been confined to their hives. None of our greatest honey-plants has budded yet, so the results may not be as bad as expected. But my experience is, where bees have made such a good start under such favorable conditions, and then have been set back, the second start will not be so great, and if the spring opens up quickly, and the honey plants come out, the bees are not so well prepared for the harvest. Some of my apiarists who have charge of bees where they have a good flow the latter part of February, report the bees three weeks behind in building up, and the first honey plants just blooming. In cases of this kind the honey-flow is a total loss to the beekeepers.

Death of Our Foreman

As the city clock was striking nine on the evening of Feb. 16, the spirit of our manager of apiaries, Dave Reeves, passed into the great beyond. He was sick only a few hours, and was looking after my interest here at Cordele while I was taking my much needed rest during the winter at Bradentown, Fla.

As soon as I received notice of his sickness, I left Florida and hurried to his bedside, reaching it only a short time before he expired.

Mr. Reeves was less than 21 years old at the time of his death, coming to me to work while he was yet a boy. Almost his last words he bade us to push on with our work, then with tears running down his cheeks, in a low voice he said, "I wish I could be with you."

Mr. Reeves, beyond a doubt, covered more ground in beekeeping than any predecessor. He headed the work of

harvesting our enormous crop of honey last season from 3000 colonies in 51 yards, scattered at intervals for 200 miles. He was a lightning operator, making the rounds to all apiaries from four to six times during the season, overseeing and planning the work, spreading brood in the early part of season where it was necessary, and looking after the weak colonies.

He made most of the increase, did a lot of requeening, changed storing room around, and left at each apiary instructions for work to be done, so the man in charge could see to the balance.

After he had seen all the honey removed, packed and shipped, and bees put away for winter, he located at Cordele, and headed the making of supplies for 1500 colonies increase the coming season, cutting out all the fixtures from the bottom-boards to the covers. Three cars of necessary supplies for increase had been sent to different parts of the field.

He made fewer mistakes than any one who has ever come under my employment. His ideas were always bright. His place in the business will never be so well filled. We have sustained almost untold loss in his death. He was truly a talented apiarist.

Apiary Work

During favorable weather in early spring bees will build up readily if they have plenty of stores and good queens. Otherwise they will lag and must have more attention, or they will not be strong enough to reap a harvest by the time the early or main honey-flow comes.

I am not an advocate of stimulative feeding, even to encourage brood-rearing in the spring; this partly on account of the fact that our weather cannot be depended upon. If a cold and dismal spell comes during the stimulation, the bees are apt to get dysentery and weaken. On the other hand, if conditions are too bright, the sun is warm, etc., the stimulation is apt to cause an excess of swarming.

Should stores run short, owing to the bees being put into winter quarters with a very limited supply of honey, they should be fed to avert

American Bee Journal



MEMBERS IN ATTENDANCE AT THE KANSAS CONVENTION AT TOPEKA IN FEBRUARY.

starvation, keeping stores well equalized, and keeping a close watch on the brood-nest. As soon as the queens start to laying well, keep them at it by inserting empty combs in the middle of the brood-nest, and if such frames contain some honey along the upper edges all the better. This should be kept up until the brood-nest is well occupied by the queens, then add supers as fast as the bees enter and start well at work in them, inserting the empty supers under those already on.

What I mean by equalizing stores may not be understood by some. It is simply taking frames of honey (not live bees) from hives which can spare them and giving them to those which may be lighter or contain but little honey. In turn the empty combs from the lighter hives are put in the middle of the hives from which the honey was taken. This will cause the heavier ones to rear more bees, and the weaker ones will be stimulated to greater activity by being supplied with stores. This means more in the way of harvesting honey than the average beekeeper is aware of.

Is a Bee-Estate Easily Disposed of?

This is a very important question to those who own large bee-estates or those who contemplate doing so. In rare cases such an estate might have to be disposed of at a sacrifice; but in the majority of cases the reverse would be true. A well established bee-business is a good investment, and if no member of the family who owned it would care to take up such a business after the owner's death, it could easily be disposed of at a good figure.

This question troubled the widow of the late Mr. R. W. Herlong, of Florida, who died leaving a large bee-estate, but it was not long before Mrs. Herlong learned of a number of buyers, and soon closed the business out at a good profit.

There is a much greater demand for a well-established bee-business than for just a small lot of bees. From a paying standpoint it is better to buy a well equipped and established business

when one has available cash. My wife used to say to me often, "What could I do with all the bees should you die?" I told her to have them worked on shares. But what about it now, should such be the case, or should I decide to sell? The deal or sale would be made

and confirmed in short order. There are many people who know me, and have some idea of the output of the business, and who are anxious to take stock at the first opportunity, and no doubt such is the case with beekeepers who have a similar business.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Grey and Grade Italians

What are the grey Italians, and where are they procurable?

A few days ago I heard of grade Italians, which are reared in California in the plateau of the mountain Shiala Nevada. If you know of them please let me know in what point the grade Italians are superior to other breeds of bees?

KNNI WADA.

Japan.

It would seem that there must be some mistake about the grey Italian. Yellow is the distinguishing color of Italians. Pure Italian stock shows three yellow bands on the abdomens of the workers. In America Italians have been bred with four or five yellow bands, but there is no tendency to grey. There are also what are called albino, having bands quite light in color. These approach more nearly to grey than those previously mentioned, yet they are never called grey Italians. Is it not possible that Carniolans, not Italians, are meant? Carniolans are favored by some, but in general they are not considered equal to Italians. They have an unenviable reputation as great swarmers.

A grade Italian is probably what is usually called hybrid; that is, a cross between Italian and black bees. These grades, or hybrids, are not generally desired, yet they are the most common



MISS KNNI WADA.
A leading woman beekeeper of Japan.

of all bees in this country, because at one time only blacks were here, and since the introduction of Italians there is always a tendency toward a mixture

American Bee Journal

of black blood. Hybrids are likely to have bad tempers, some of them stinging viciously. The first cross may be just as good workers as pure Italians, but they do not have the same fixed character, and succeeding generations are likely to deteriorate.

On the whole, no kind of bee has given such universal satisfaction in this country as pure 3-banded Italians, and the likelihood is that you will find nothing better for Japan.

Please accept very hearty thanks for the pictures. It will be a great pleasure for the readers of this department to look upon the face of a sister in far-away Japan, and to look upon your beautiful apiary, even though they may not read the characters at the right. Pity they cannot all see your beautifully clear writing of the English language, which very few of them can equal.

Please do not let this be the last we shall hear from you and your bees.

Questions and Experiences

I began keeping bees last spring with one colony to start with. I now have 11. I secured 150 pounds from one colony, and very near the same from another; the rest were too late to gather any surplus honey. We are using the large hives, 20x26, but they are very heavy for one person to handle.

1. Are they too large to work well?
2. Can a hive be painted on the inside, or would it hurt the bees in any way?
3. I have a swarm of bees in the house which was taken from a tree late last fall, and I am not sure if we got the queen. Will they build worker comb if they are queenless?
4. They are doing well. I feed them every other day with warm honey. Is that often enough? I think the world of my little dumb friends, and we get along nicely. It is very seldom I get stung. I give them all the fresh water they can drink on hot days; when they see the pail they almost cover me sometimes.

I never saw an apiary in my life or had any dealings whatever with bees until last summer; but I often wished I had a few colonies. Finally I got my wish, and I am not a bit sorry, as we get along nicely together.

Mrs. Wm. F., Iowa.

ANSWERS.—1. The hive may be too large, and it may be too small. You give only the length and width, without saying anything about the height. It is not very likely that it is shallow enough to be too small. You had one colony to start with last spring, and now have 11. If you bought no others, and the 11 came from that one colony, with 160 pounds of surplus from one colony, and nearly that from another, perhaps 300 in all, you surely had immense success, and that is pretty good proof that the size of the hive is all right.

2. It is practically certain that painting inside would do no good, else there would be some who would thus paint. Very likely it would not make a great deal of difference; but some think it would do harm. Indeed there are some who think it is better for the bees that no paint should be even on the outside.

3. A queenless colony will not build worker comb, although a weak nucleus may build such comb if it builds any. But if you find a colony of anything like ordinary strength building worker comb, you may rest easy that it has a queen.

4. It would be better not to feed so often as every other day. Indeed, in cold weather, it is best not to feed at all, but to have enough stores in the hive so no feeding is needed till warm weather comes.

You are surely to be congratulated on your success. A woman who knows enough to manage bees so successfully must know how to vote.

Does Soil Influence Nectar Flavor and Color?

"Mr. Chadwick argues that locality and soil do not influence the color or flavor of nectar. We are sure he is wrong, for usually golden-rod honey is a dark inferior honey scarcely fit for bees to winter on, yet here with us it is a beautiful golden and delicious. Our customers demand it in preference to our white clover honey, which is extra nice.

"The soil here is light and sandy. A few miles from us where the soil is hard clay, the golden-rod honey is very dark and inferior in flavor. Same way with potatoes; we have often sold potatoes 10 cents per bushel above the market price because of their being grown on sandy soil. Apples are more highly colored and better flavored than those grown on clay.

"Arden, Neb. EMMA S. MILLS."

Swarming During the Record Crop

Inquiry has been made as to what we did about swarming while getting our big crop last year. We followed the

plans given in "Fifty Years Among the Bees," not adhering strictly to any one plan. The year was a bad one for swarming. Some say that when a heavy flow comes on the bees get so interested in storing that they give up swarming thoughts. That was not the rule in 1913—perhaps never—in this locality. Never was there a better flow, and never was swarming more troublesome than in 1913. Bees swarmed early and late, and often.

About once in 10 days examination was made for queen-cells. So long as only eggs or quite young larvæ were found in the cells, they were destroyed and nothing more was done about it, but if, after 10 days, larvæ were found sealed or nearly ready to seal, or if, as too often happened last year, a swarm issued, then the colony was treated. In some cases we caged the queen for 10 days. In most cases we used the put-up plan. Two or more frames of brood, perhaps all the brood, with a force of bees, were put in a hive with the queen and set on top of the supers—no communication between—and in 10 days these were put down again, all cells in the lower story being removed. In some cases the bees swarmed again within a very few days—a thing that does not often occur other years, and then the queen was caged for a few days longer.

A few colonies were run for extracting combs, and in some of them the Demaree plan was used; when there was danger of swarming all the brood, except perhaps one frame, was put into a second story, and the queen was left in the lower story, this lower story being filled with foundation or drawn combs. A queen-excluder was between the two stories. As the brood hatched out in the upper story, the cells were filled with honey. This is an excellent plan when extracting combs are used, but of course does not work with sections.

CANADIAN



BEEDOM~

Conducted by J. L. BYER, Mt. Joy, Ontario.

More About Beginners and Conditions in the Beekeeping Industry

Judging from letters I have received relative to that item in the February American Bee Journal entitled, "Honey Production as Ranked with Other Business," personally it is a case of "fools rushing in where angels fear to tread." Men have written me from far off Washington in the northwest, and Texas in the southwest, to say nothing of all other points of the compass nearer home, and without exception all are enthusiastically in favor of the views I expressed. But a lot of these writers warn me to look out or the "fellows with an axe to grind will get me," and being naturally slow to take a hint, I hardly understand what they mean. Large producers, including presidents of State associations, have

written me. While surprised at such a response, I am gratified to find that I am not alone in taking what some might call a reactionary step. I am sorry that "Optimist" has not given his address, for not knowing who he is, I am at a loss to know how to take him; really, I feel that he is just *joking* in some of the things he said.

First of all, I want to say emphatically that it is none of my business how many enter the business of beekeeping *voluntarily*—don't misunderstand me on that point. My contention is that beekeepers who depend upon the business for a living, and the associations they are affiliated with are doing a foolish thing when they try to coax and encourage others to enter into the business and increase competition, especially when production is already in excess of demand. It is not

American Bee Journal

fair to the men already in the business, and it is just as unfair to encourage others to come in when the prospects are not good for them to succeed financially.

If "Optimist" is no nearer correct in all his claims than he is when he wonders if I am not planning to increase my colonies in 1914, he is much mistaken. Aside from winter losses, I expect to have at least 100 colonies less this year than last. As to nectar going to waste in some localities, that has happened for ages, and no one will be held guilty of a heinous offense for neglecting to try to gather all this nectar even if there were no market for it.

Some places are overstocked now in Ontario, as many know, and more than that, many beginners fostered by the help of the Ontario Association and the Department at Guelph, are causing this overstocking by starting up beside men who have been in the business for years. Of course, "Optimist" will say that is all right; from his remarks he is such a stickler for "sentiment" that the baser things, such as the necessity of a man feeding a family, should not be taken into consideration. Unfortunately sentiment of this kind, like love, while decidedly pleasant and desirable, does not go far in filling an empty stomach.

"The more honey there is, on the market the cheaper it will be," quotes our friend. No one disputes that phase of the argument. It is utterly foolish to try and make honey cheaper than it is now, when at present prices it is lower than nearly all other lines of food products.

"Optimist" asks, with the large increase in members, will we not get legislation easier than before? I don't know, and at the present moment I feel tempted to say I don't care. I do not believe the extra membership obtained is worth all the work and money it cost. Many of these members came in at 50 cents. We gave them a journal as a premium that costs us 70 cents, to say nothing of the cost of carrying them along. The balance came in at \$1.00 each, so that leaves 30 cents to their credit. After all, what does a very large membership mean in the way of benefits? Candidly, I don't know.

"Optimist" is "playing to the gallery" when he mentions the fact that Dr. Kramer, of Switzerland, has 9543 members, and "they all seem to succeed, too." A smarter bunch evidently than we could get on this side of the pond. Does my friend not know that a very small percentage of these beekeepers depend upon the calling for a living? One of my correspondents stated in his letter that there are some who would have us be like scores of European beekeepers, who carry their crop of honey to market on their shoulders.

Before closing let me quote extracts from a letter received March 13. The writer is one of the best known men in the United States, but as the letter is marked private, I cannot give his name. Among other things he says: "Honey producers had better increase the demand for honey than the supply. In fact, it would be better for them if the demand exceeded the supply, as the

price would then take care of itself. In my opinion this should be the chief object and work of all beekeepers' organizations." "The keeping of more bees, making of more beekeepers, and producing more honey will be well looked after by the manufacturers of bee-supplies." All honey producers who have discovered methods of doubling the honey production, should be advised to put such methods into cold storage until the demand for honey is equal to the supply, or keep more bees."

No doubt "Optimist" will call me a selfish mortal, and perhaps he is correct, for I believe that self-preservation is the first law of nature. Perhaps he will call me a pessimist as well, but in this he will be entirely mistaken. All who know me personally, while they cannot help but know that I have a lot of failings, will at least give me credit for being a "cheerful idiot." As to selfishness, I have answered hundreds of letters from beginners in every province in Canada, and nearly if not all the States in the Union, and while I have never made wild claims as to the possibilities of the business, if I have ever written discouragingly to a single one of these people I wish he would remind me of it. In conclusion, let us just use plain common sense in this matter, and for the time at least leave gush and sentiment alone until we have something more encouraging to warrant us in persuading people to go into beekeeping for a living.

Weather Conditions and Wintering

The frigid weather mentioned in the March issue continued through February, and March up to date has been colder than usual. Although bees had their last cleansing flight on Nov. 23, and have since passed through so much very cold weather, they appear to be holding their own fairly well, judging by external appearances. Nearly all colonies I have peeped into by lifting the quilt under the packing, are nicely clustered and apparently little the worse for their long confinement. Of course, it is too early to say

how the bees will come out, but I am not looking for any great loss. Once we get to the middle of March we hope for fine warm days, so that we can see the bees on the wing once more.

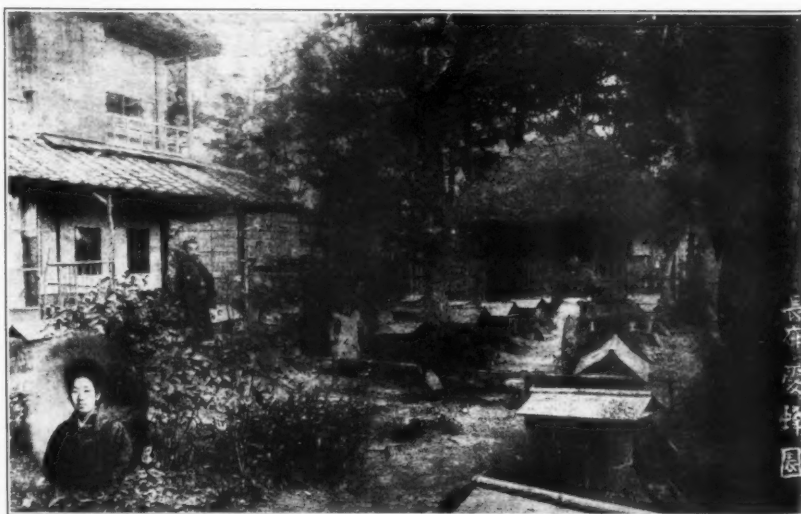
While we have had little snow all winter, the cold weather has kept what we have from melting, with the result that (March 13) the fields are still covered. This means that what little clover we have (alsike) will be apt to stand the winter fairly well, and be in better shape to weather the trying times later on when we have thawing by day and freezing by night.

Association Did Not Attempt to Sell Honey

While I agree with the sentiments expressed by R. F. Holtermann, on page 94 of the March issue of the American Bee Journal, I would remind our friend that he is in error when he says that the "Ontario Beekeepers' Association" undertook to sell honey for the members. I was in sympathy with the effort referred to, and think the work was commendable, but the Association deserves neither thanks or criticism for anything that was done, as Mr. Pettit and some of the students at Guelph, Mr. Weir in particular, undertook this work on their own responsibility. The executive had nothing to do with the effort. Please do not give the Association any honor for work it did not do, and at the same time also refrain from censuring it when not guilty, for goodness knows it has enough to answer for without being blamed wrongfully.

Saner Methods for the Future

After all, friend Holtermann, don't you think your article smacks a bit too much of the "I told you so" principle? I am willing to admit that you have at times tried to "put on the brakes," yet in common with many of the rest of us, you might have done better. It is always easy to see the necessity of locking the stable door after the horse is stolen. While we cannot help the



A WOMAN APIARIST OF JAPAN, WITH A SECTION OF THE APIARY.

American Bee Journal

past, I hope the lesson we are now learning will bear fruit, and that "booming" will not be quite so much in evidence in the future. At any rate, here's my hand as a pledge that this scribbler for one will do all in his power to help along saner methods for the future.

Crop Prospects Unfavorable

Prospects are not good for a crop in many sections of Ontario this year,

owing to the drouth of 1913 killing nearly all of the freshly-seeded alsike. Unfortunately our own locality is among the stricken places, so we are anticipating having little to do this coming summer, with a correspondingly light pocket book in the fall. Oh, well! there is a lot of honey still left in Ontario from last season, so perhaps it will help the business in general if some of us poor mortals, living where the clover is scarce, do not have any honey to place on the market in 1914.

for bees here, as they have done every spring for several years. The price is becoming fairly well established at from \$5.00 to \$6.00 per colony for good bees in standard hives.

Big Plans for Bee-Exhibit at Panama Exposition

We Californians, north and south, are planning what we hope to be one of the best exhibits of the bee and her products ever made, at our Exposition at San Francisco next year. This is intended to show everything pertaining to an apiary, and will present the best methods of obtaining results in honey production. It is under the management of Mr. M. H. Mendelson, of Ventura county. Mr. Mendelson is well known as a successful beekeeper of large experience and great energy, so we know the results will be forthcoming. We are sincerely hoping for a good crop of high-grade honey, so that we may not only reap for ourselves, but be able to assist in furnishing material for an exhibit of which our State may be proud. It is unnecessary to say that all up-to-date beekeepers of the State are boosting for the California exhibit, and we hope all other honey-producing States will vie with us in making similar exhibits at San Francisco in 1915. It would help our national market immensely, as well as assist in furnishing beautiful and instructive entertainment to the spectators.

California Beekeeping

Conducted by J. E. Pleasants, Orange, Calif.

Bright Prospects for This Year

The outlook for a honey crop in southern California is fair. This, however, does not mean that a big crop is assured. There are several conditions necessary to the production of a good nectar flow here, the one absolutely essential being plenty of winter rain. Following this, weather conditions must be favorable, the nights mild, light spring rains, and a slight humidity in the early part of the day.

We have had good rains, an ample rainfall for the advance of the season. The growth of the sages, especially the black, is abundant. The next two months will decide what our crop is to be, but the promise is encouraging. The last two seasons have been failures on the unirrigated forage on account of too light rainfall, as most apiaries are weak in bees. Of course you can build up rapidly in a year like this, but you increase at the expense of honey production. A wise bee-man will "average up," increase to some extent and also work for a harvest.

The moving of bees from the valley regions to the mountains will soon begin by those who would rather be in for the early mountain bloom than wait for the orange flow. Moving from one section to another, though not a great distance, is practiced here by many. After the honey-flow is over in the mountains, bees are moved to the valleys to take advantage of the bean bloom. Many remain to winter, build up on willow, eucalyptus, etc., and move back to their home apiaries in the mountains to be ready for the mountain plants. Some wait for the orange flow, which, roughly speaking, runs from about the middle of March to May first. This condition keeps the inspectors pretty busy, as all bees must be inspected before moving.

American Foulbrood Under Control

We have American foulbrood under control here now. All counties that have had competent inspectors for several years have reduced American foulbrood to so low a percentage as to be easily under control.

European foulbrood is creeping into

new territory, and we handle it by strengthening and re-queening — of course with good Italian stock always. I wish our scientific experimenters could help us more with this disease. It is still a question just *how* the infection is carried. Now, if we knew this with the same certainty that we do of American foulbrood, it would help us with bee-diseases, and I hope they will investigate conclusively along this line. We hope Dr. Bruennich will give his method of marking queens. It would be a help to many, especially beginners.

Buyers are coming into the market

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Dr. Miller's Criticism

The joke certainly is on me (page 44) in thinking that I saw wood covers in Dr. Miller's cellar. The fact is, I hardly took a look at them, as my attention was taken up with the dead bees on the floor and at the door (there were only a few), and the temperature of the room. Yes, I think I know from experience that unpainted white pine hives will gape at the corners in a very few years no matter how well nailed. Our western sun will certainly pull nails and check wood. I have the dove-tailed hives in mind, too. I have been told that redwood is a better wood for the West than white pine, but have had no experience with it.

I am pleased to have the description of your cover, and would like to know if the zinc just covers the top or does it extend over the sides? My opinion would be that $\frac{3}{8}$ -inch boards would be too thin for us out here, and that $\frac{1}{2}$ would be better. Is your cover the size of the top of the hive or larger? What would be wrong with nailing $\frac{3}{8}$ -inch strips around three of the sides of the top of your cover and making a bottom-board of it? You would probably want the strips $\frac{3}{8}$ to give a deep

entrance. I have had a combination cover and bottom-board in mind for some time, and some of these days I am going to try and make one. It would be in the line of simplification of beekeeping equipment.

Overproduction and Under Distribution

There is an idea prevalent in beekeepers' minds that with advertising we can greatly increase the consumption of honey. And such is the case in very large part, but before any manufacturer or producer of an article launches upon an advertising campaign he first has his distributing agencies established and his goods ready to deliver. What Mr. Byer calls overproduction is nothing but under distribution. If every city in Canada of over 50,000 population had a specialty honey man, or some one who bottled extracted honey and kept all groceries, markets, delicatessen stores and restaurants supplied with comb and extracted honey the whole year around, the dull honey market would be unheard of for some time, I think.

Overstocking is more of a menace than so-called overproduction. I certainly think that the Canadian bee-men

American Bee Journal

should bestir themselves on this matter of distributing honey. If you cannot co-operate in marketing when a large proportion of your crop is unsold, there is not much left to do but sell your honey for less. The low limit in the West on honey is about 85 cents a dozen for fancy and No. 1 comb honey. When it gets down to that figure, the bee-men get together. It is necessity that drives the majority of bee-men to co-operation, and good common sense that leads others to get together. I should think that a little foresight would bring the Ontario bee-men together before forced by the lowering price of honey.

What is there to this question of overproduction? Not very much when you take the whole country over; but it is possible when you take into consideration some States and districts. What should the average consumption of honey be in a State like Colorado? What could it be made to consume by advertising? Colorado's honey production for 1913 was 5 pounds for every man, woman and child in the State. That is 25 pounds for every family, counting the family at five members. How much of this production can we get consumed at home without shipping beyond the borders of our State? I do not think that we get more than 5 pounds per family consumed at home. Then we have 20 pounds per family that has to be shipped out. Do you think it a possibility to get a State with 800,000 people to eat 4,000,000 pounds of honey in one year? I do not. And you may use all the advertising schemes you want, I do not think the thing can be "did."

In Boulder, all the grocers have

comb and extracted honey displayed and on sale throughout the year, and they advertise it in the papers. The bee-men (five specialists who live here) all sell a good deal from their homes. It is only an estimate, but I believe between 20,000 and 30,000 pounds of comb and extracted honey is sold in a year here in Boulder. We have about 12,000 population, with a pretty large mountain population depending upon us for food supplies. The consumption could doubtless be increased, but with sugar becoming so cheap, and cheap syrups so plentiful, I think there is a limit to the amount of sweet that we can get an individual to eat. It certainly will not be a very wise advertising policy to

spend much money urging people to buy honey at 15 and 20 cents a pound when sugar can be had for 4 cents, and the increasing cost of living is the most talked of subject among our people today.

The proper distribution of our honey crops, and keeping our large markets supplied throughout the year will handle the situation for some time. The greatest need is an experienced honey man who will work systematically the trade in every large city. He should be a man who can be on the job the year around, and not a beekeeper who jumps into the city in the fall and winter and then does not show up again until the next fall.

NOTES FROM ABROAD

Our Visit to Lyon and Albertville

BY C. P. DADANT.

LYON (the English spell it Lyons) is the third largest city of France, at the junction of the Rhône and the Saône, the former a rushing, foaming, tempestuous stream, the latter a quiet, blue river. They are mythologically represented, in poetry and statuary, as husband and wife. The allegory is quite proper.

We were directed here to the secretary of the local bee-association and publisher of "L'Abeille du Rhône," Mr.

Vibert. We found that his place of business was less than four blocks from the hotel. So we went there at once. At first sight, it seemed we had the wrong address, for the block was occupied by large wholesale houses. But in Europe, especially in large cities, you can find active business at the third story of an inner court, and that is where we found him. We had no previous knowledge of this man. But he knew us well through our past writings, and at once talked to me of familiar subjects. He was full of fun and puns.

With him we visited other friends,



LYON EXPERIMENTAL APIARY AT THE AGRICULTURAL COLLEGE—MR. VIBERT AT THE EXTREME RIGHT.

American Bee Journal

and called upon a former inhabitant of the United States, Mr. Gallet, who is carrying on a business in Lyon, and whom we had met before. He was courteous enough to put himself and his automobile at our disposal. We went out the next day to the Agricultural School of Ecully, near Lyon, where Mr. Vibert has classes in bee-culture regularly during the summer. The apiary is small, as will be seen from the picture. But all sorts of hives are kept. Mr. Vibert is the gentleman on the right. Much good is certainly secured from these courses in bee-culture. We are glad to find that they are also becoming numerous in American colleges.

A little later we visited a large apiary, some 10 miles away, about 90 colonies of Carniolans, Italians and com-

here. His honey-house had no window in it. So he has to leave the door open when extracting honey or manipulating his implements. But though we laugh at these extraordinary conditions, we remember that this is a country of long established stone buildings, that they do not build anything temporarily, and that they, for that reason, hesitate a great deal before making any changes to existing conditions. The wonder should be that they progress as much as they do.

This old gentleman was cured of rheumatism by bee stings in 1871, or 42 years ago. He was not then acquainted with bee-culture, and was induced to practice it because of this trouble. He asserted to me that he was now better able to work than he was at 30. However, he is not entirely free of the disease, and perhaps the active outdoor life has had as much to do with his improvement as the effect of the bee poison.

He was very proud of his Carniolan bees, and said that they were even more peaceable than the Italians.

From numerous chestnut trees in the vicinity the bees harvest honey, which, I was informed, is of very bad quality. White melilot, locust and sainfoin are the main honey producers.

The next day, before leaving the city, we found time to visit the Chamber of Commerce and the Museum of Tissues, where we saw silk tissues dating back several centuries, and costumes of the time of Louis XIV. We finally left our kind guides to continue our way. We were given a pressing invitation to come back upon our return from Italy. Mr. Vibert assured us that if we promised to stop there again, he would arrange a banquet with 75 beekeepers of that region. But it was out of the question.

On the way to Albertville, Savoy, we had an unexpected and interesting instance of the popularity of the American methods of bee-culture in the country at large. At Chambéry we had to change train. Two country ladies, loaded with bundles, came into our

compartment, and I had occasion to help them in. We had a chat with them, and when they found out that we were from America and interested in bee-culture, one of them said: "My father kept bees by the American methods and used the Dadant hive." I took a visiting card out of my pocket and handed it to her. Great was her astonishment to find that I was the man whose name she had just spoken. Yet, we have never, so far, sold a bee-hive in Europe. All the influence upon European bee-culture has been secured through the publishing of the translations of the Revised Langstroth book. Only two or three are pushing the sale of American goods on the Continent. The French edition of Root's "A B C" is now helping the work begun by the Revised Langstroth.

In the September number, we have already spoken of our visit to Albertville. I wish to insist on the advisability, for our beekeepers, to push the sale of honey in a manner similar to that followed by Mr. Mont-Jovet, furnishing it to hotels put up in individual packages of a tenth of a pound. The paper packages containing it are almost identical with those used by Mr. Pouder, described on page 10 of our January number. Granulated extracted honey is almost always the kind supplied. It may be found in almost every hotel of Savoy or of Switzerland. At the prices mentioned to us of \$2.50 per hundred packages, it proves convenient to the hotel keeper and sufficiently profitable to the beekeeper, since it serves as a very efficient advertising medium for his product.

Mont-Jovet is a practical man, a dealer, as well as a large producer. In queen-breeding he has tried the isolation plan, so much praised by German-Swiss apiarists, as we will see later. He has proven to conclusion that queens and drones often mate at 4 kilometers, $2\frac{1}{2}$ miles. He has known them to mate at 6 kilometers. This tallies with our own experience at home. Of course, in a mountainous country, the result may be quite dissimilar from

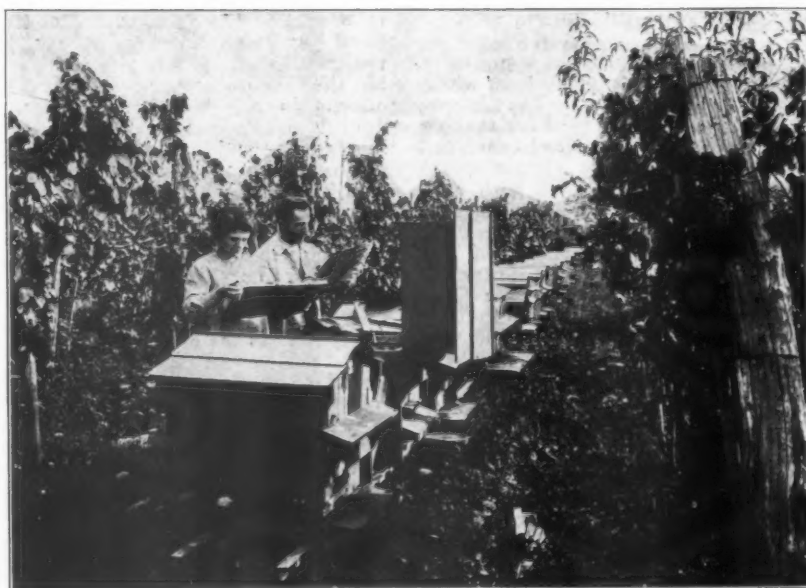


MR. MONT-JOVET.

mon bees, mixed. The owner, an old gentleman over 71 years old, insisted on treating us to a honey preparation of his own make, a sort of metheglin. But it was fermenting so strongly that when the cork was liberated it went like a gun shot, and the bottle emptied itself before anything could be done with the contents. Foaming champagne was nothing in comparison. A second bottle gave the same result, and much to his regret he finally had to treat us on clear water, for we would not accept of wine.

I saw there how easily people deceive themselves when trying to make rules of accidental experiences. He had a good crop of honey, but not a single colony with more than one super. Upon enquiry, I found that he had only once tried to put a second super under the first. The bees had carried the honey down, probably because the crop was at an end. But he had concluded from his one experience that it would never do to use more than one super on a hive at a time. How many of us, who laugh at this queer idea, will make the same mistake of establishing a rule on a single exception?

Another peculiar thing I noticed



MR. AND MRS. MONT-JOVET LOOKING FOR A QUEEN.

American Bee Journal

that obtained in plains like those of Illinois. But since the bees may not enjoy or practice scaling very steep hills, they would probably travel farther up and down the valley. In the case of worker-bees, much depends upon how near the field of blossoms is and whether sufficient in extent. But in the cases of queens and drones there is no such limitation and they fly quite far.

We have already mentioned one cut accompanying this article. The others are: A portrait of our host taken several years ago, then a view of one of his apiaries, among the grape-vines, where he and his charming better-half are busy hunting for a queen. Notice the cement pillars, shaped like troughs and supplied with water to keep away the ants. The frame work that supports the hives is of iron and rests upon those troughs. I have never seen anything so carefully arranged. The caps are hinged upon the hive front and rest upon the portico when the hive is opened.

The hive shown in the next cut is what he calls the "Savoyarde." It is made of inch lumber, lined on the outside with a woven wire straw mat or cushion. Such hives have the advantage of straw hives without their dis-

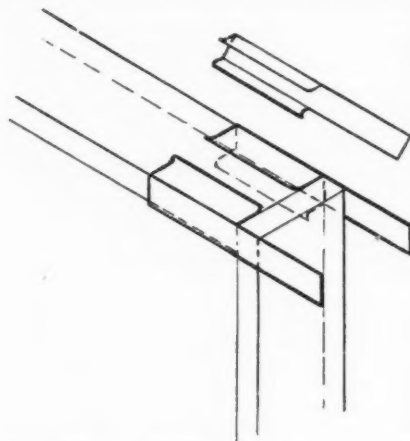


DIAGRAM OF REMOVABLE SHOULDERS FOR FRAMES AS USED BY MR. MONT-JOVET IN HIS NUCLEI.

advantages. They are not very pretty, yet they have a medieval look which pleases many persons. The frames seen in the picture are used for making nuclei, four nucleus frames to each full brood frame. They are simple square frames which are provided with artificial, removable tin shoulders for support in the nucleus.

I do not know whether it is of any use to urge our beekeepers to try the straw protection for hives. We have ourselves used a straw mat in the Dant hive for 40 years. We find that the placing of this non-conductor over the brood-chamber keeps the hive cool in the summer, warm in the winter. I believe that there would be a great advantage in using an outer coat of straw on our hives, as this able apiarist does.

On the second day of our stay at Albertville, we went, with our host and his wife, into the mountains and traveled some 36 miles. It was on this trip that we saw the potato vines 51 inches tall which were so badly beaten by the giants of Idaho, shown on page 359 of

our November Journal. We saw big old fruit trees, hundreds of years old, especially pear trees; fine castles, old towers, and electric power plants run by the cascading streams, and furnishing cheap light to all the neighborhood. We also saw a small hive-and-

section factory. But this could not compare with the big plants of our country.

The following day, Aug. 3, we took the train for Geneva, passing by the delightfully pretty Lake of Annecy. We arrived in Geneva by noon.

CONTRIBUTED



ARTICLES~

Popular Fallacies

BY J. F. ARCHDEKIN.

IT IS ASTONISHING how little the average person knows about bees. I have been amused repeatedly by the queer ideas most people have on the subject. Cases have come to my notice that even border on superstition. Let me hasten to add that I don't claim any special knowledge of bees. To disprove any rights I may have to put on airs, the following incident will suffice: An old fellow who has cut a few bee-trees, asserted that it had been proved that bees often fly 50 or 60 miles in search of honey. After a few more statements tending to display his superior knowledge of bee-lore, he boldly remarked that I knew nothing whatever about bees. Some jolt? Well, I guess so.

Should some of my neighbors see me in the bee-yard early in spring opening hives and inspecting the combs, they innocently ask if the bees are making much honey. I am probably feeding with not a blossom in sight.

Many people are bee-owners who are not beekeepers. Their ignorance is of the densest, considering their chance to learn. Should you mention subscribing to a bee-journal or getting some bee-books, they invariably put up some excuse to dodge it.

A man who is an up-to-date dairyman says he can understand how honey is produced, but is unable to comprehend why I rear so many queens. He realizes that each hive has one queen, but the idea of keeping several dozen queens in one hive is past him. It doesn't make any difference if they are in cages.

A very estimable neighbor of mine kept his bees in big box-hives made of 2-inch white pine lumber. These are the largest hives I ever saw. There is as much room in one of them as in three 8-frame hives, probably more. About all his bees ever did was to swarm. Twenty-five pounds of chunk honey each is the extent of his crop. A few of these same colonies, when transferred to modern hives, made a fine crop of section honey.

Another neighbor uses frames, but says he likes salmon boxes better than regular hives, so he uses the former. He sold \$45 worth of honey from about a dozen colonies last year. Therefore, he feels very much encouraged.

There is also a firmly established conviction among honey consumers that all honey is adulterated. This applies to comb as well as extracted. I

had one customer who argued with me to some length that he had bought comb honey which had been manufactured. Nothing I could say would shake him, not even when I gave him the name of people who would pay him \$1000 for a pound of it. About the first question the city customer asks is if the honey is pure, and he has to be assured that it is pure country honey before he will buy it.

By all means let us educate the beekeepers, the bee-owners and the honey consumers. How shall we do it? By establishing apicultural departments at the State agricultural colleges. This will give the students a chance to learn beekeeping if they desire. When the college runs an alfalfa special, and a dairy special, and a corn special, on a tour to spread knowledge of these crops, let the apicultural department send a man along to talk beekeeping at each stop. The rural schools of our State (Missouri) teach agriculture, and the scholars are required to be proficient in this branch. Couldn't a little bee instruction be included? It would be a fascinating subject for the children.

Now for the consumers. Couldn't the National Beekeepers' Association arrange a honey exhibit and send it to the pure food shows that are held each year in the principal cities? This would get at the consumers, and would undoubtedly create greater demand for honey. At the same time it would operate to set at rest the suspicion as to its purity that is cast upon honey.

St. Joseph, Mo.

[At the bottom of page 51, January number, our experienced contributor, J. L. Byer, criticizes the instruction given in colleges, by placing bee-culture upon the curriculum, and asserts that it is helping to cause overstocking. The preceding contribution, which is only a reminder of the scantiness of public information on bees, demonstrates whether it is worth while to extend the knowledge on apiculture.—EDITOR.]

Foulbrood—A Disease of Natural Selection

BY DR. CARTON.

IN THE STUDY of all infectious diseases, there are two factors to consider: the microbe special to each of them and the conditions of predis-

position of the organisms which have given hold to the infection.

At the present day, under the influence of the great development of bacteriological science and of the services which it has rendered in surgical practice, there is too much tendency to consider, in human and animal medicine, only the microbial element, and to neglect the causes of weakness of the organic beings upon which microbe thrives.

This means that in the researches pursued regarding foulbrood, it is wrong to confine ourselves to an enquiry concerning the contagion pure and simple, and to believe that bacteriology alone may enable us to remedy the trouble, by furnishing us a specific antiseptic treatment.

To my mind, a faulty method is followed by directing the studies in this exclusive way. We should, on the

contrary, make efforts to ascertain, in the direction of the bee's organism, the causes of weakness which render it liable to catch the infection.

But, in order to be still better understood, this proposition needs to be sustained with general considerations and analogical reasoning. Everything holds together in Nature, and that which is correct in general for the diseases of man is also correct for the diseases of animals.

Thus, when we examine it from the standpoint of the evolution of individuals and of races, a disease is but a work of natural selection which arrests the beings of the species on the downward slope of natural degenerescence, by compelling them to become purified, to rid themselves of the noxious substances which have accumulated in them. It compels them to momentarily cease the usage of bad conditions of

existence, which would have quickly brought about their destruction, if these conditions had been permitted to remain in action. Disease, therefore, fulfills a useful role for the preservation and the progress of the race, since it attacks only the beings which are in a state of vital inferiority and causes them to disappear, to leave standing only the robust organisms capable of bringing about the progress of the race.

In fact, do we not see that, in man, the acute and chronic infectious diseases strike almost exclusively the weak or the degenerates, and that in even the worst epidemics, not everybody is affected, in spite of common contact with virulent microbes? So, when the epidemic is at last extinguished, those individuals alone remain who are the most resistant; they are the choice of the work of natural selection, as being the best and the most apt to perpetuate their kind.

We see then, that without doubt, the idea of the resistance of the beings is important to view. But what are the principal causes of the waning of the vital forces of organisms? They are of two opposite orders. There are on one side insufficiencies, that is to say lack of good air, light, motion, etc. And on the other hand we find all the vices and excesses, that is to say overfeeding or the consumption of elements which are unhealthy, toxic, adulterated, artificial, and perhaps overwork.

These two opposite, defective modes of living may lead to the same disease, the same infection. Man, for example, may cause himself to become tuberculous by lack or excess of food. There is no cause for astonishment in these identical conclusions, since the two modes of life have been equally deficient and have led to the same final result; the weakening of the force of vital resistance. The microbe gives no regard to the cause which has produced this weakness; it is sufficient for it to find the open door; that is to say the absence of organic defenses.

All the diseases, and especially the infectious diseases, so-called contagious, have a deep cause, non apparent at first sight. They depend much more upon the mode of life followed generally than upon the contamination by virulent germs.

In what concerns foulbrood, it is essential to take note of this fact, of the infection coming principally through the lack of resistance of the honey-bee, due perhaps as much to the insufficiency of food and care as to faults in the artificial feeding or the management of apiaries. It explains why foulbrood may appear as readily in abandoned apiaries as in enterprises conducted with a profusion of caution, often contrary to natural laws and therefore noxious.

That which indicates that the question of resistance is fundamental is that all the microbes are present around us in Nature, whether they exist upon us, in our natural cavities, or around us in the shape of unimportant parasites or *saprophytes*, as they are called in scientific language. It has been ascertained that we carry permanently, in our nose, mouth and in-



COMPOUND FRAMES FOR NUCLEI AT THE MONT-JOVET APIARY.

American Bee Journal

testines the bacilli of diphtheria, of tuberculosis, of typhoid fever, for instance, and that in spite of this, we are not attacked by these various diseases. But let our forces of resistance weaken some day, one of these microbes may begin to multiply in predominance over the others, become aggressive and complete the ruin of the partly decrepit organism, before real infection appears. The microbe then passes from the state of latent and unimportant parasite to the state of infection; in such a case they say that from *saprophyte* it has become *pathogene*. But the infection which has become unlatched is really only the result of a primitive condition of organic decadence. The microbes live, therefore, upon the deterioration of the being, as moss and rottenness grow upon old trees already half dead.

This fact that the microbes of most of the infectious diseases exist everywhere in Nature explains how foulbrood epidemics may arise suddenly in spots where none had been noticed before. There was no need of bringing the germs from far away; they were already there from a long time, and they awakened from their sleep only because they found favorable conditions to multiply upon bee agglomerations existing in a condition of least resistance.

The diverse varieties of foulbrood are therefore not essentially different within themselves, since they only express the development of local races of bacilli. Thus foulbrood, in spite of the bacteriological dissimilarity of races, is essentially a unit. And this unity is due to its being derived from a similar initial weakness of the vital forces of colonies of bees.

Must we set aside entirely the remedies which are solely anti-contagious and antiseptic, to preserve our bees from foulbrood? I think so and this is why. An example taken from human medicine will demonstrate it clearly. Thanks to bacteriological science and to anti-microbial preservation measures taken the past 30 years, they have succeeded in restraining the seats of great epidemics: cholera, typhus, plague, dysentery, etc. They have also considerably diminished the number of cases of mild infections: measles, scarlatina, diphtheria, etc. But when we consider the matter closely and figure it up, what have we gained? We have prevented Nature from accomplishing her work of selection, which suppresses degenerate individuals through acute diseases.

But this law of natural selection is an ineluctable necessity; we cannot in any way avoid it. Unable to express itself by the method of acute diseases, it accomplishes its work under another shape, that of chronic diseases and infections. And, in fact, since mankind has preserved itself from acute infections, it has become the prey of degenerescence, insanity and chronic infections: tuberculosis and cancer, which, at present, decimate the civilized centers and increase in a very alarming and accelerated way.

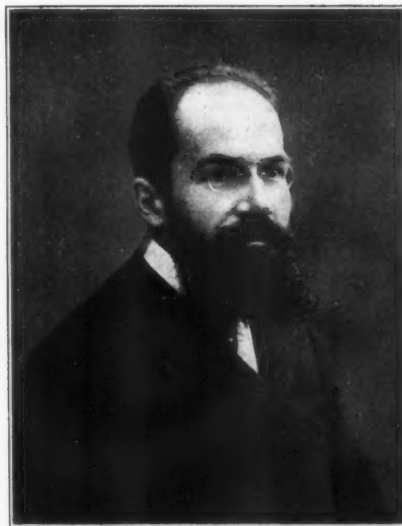
We have thus gained nothing by the change and the unnatural measures that we have taken have turned against us, since they have permitted a host of

debilitated beings to remain in action and impede the progress of the race by their unhealthy presence, and by the tainted offspring which they produce.

Taking again the analogy with bees, we thus see that if we should succeed in efficaciously combating foulbrood with anti-microbial measures alone, we might preserve our bees almost completely, but we would give rise to other diseases, acute or chronic, which would arise to accomplish the inevitable work of natural selection.

The question therefore demands to be taken from another angle. We must, first, seek the causes of degenerescence of the races of bees, the motives of the weakening of the vital forces of colonies; that will be the best means to secure them against destructive epidemics.

What are the principal causes of vital weakness that may be observed among bees? There may be first the



DR. CARTON.

lack of care and food, in the case of old abandoned apiaries. We will not discuss this; it is too well known. But for the large apiaries so well cared for, where is the danger hidden? To my mind, it comes from two preponderant causes. First, alimentation with industrial sugar, by feeding either in spring or winter. This food is anti-physiologic, I have already demonstrated it in the case of man (*Les trois aliments meurtriers*.—P. Carton, Maloigne, Paris, 1 f, 25), and it is a very important cause of the digestive disorders which lead to the worst diseases. It is in fact a chemical product, devitalized and irritating, since it is not associated with diastase, with mineral matters and living energy, like natural sugar contained in fruits or honey. The danger of alimentation with artificial sugar is at the present day too much disregarded, as well by doctors as by beekeepers. On either side it will be well to think of it at length and palliate the danger within all possible limits. We should be less rapacious towards our bees; limit their yield; avoid weakening them by uncalled for feeding not in accordance with Nature; not take away from the bees the greatest part of their supplies,

and, in case of necessity, feed with honey kept in reserve, or exceptionally with sugar half mixed with honey, to lessen its noxiousness.

There might be much to say also against the intensive and artificial rearing of queens. This artificial selection is probably not equal to natural selection. The example of our finest races of domestic animals, selected by the hand of man, is there to prove it. Our finest bulls never have the force of resistance to tempestuous weather and to diseases that is shown by wild cattle.

To terminate, I will give one more argument in favor of this opinion that foulbrood is due more to a weakness of the organism of the bee than to a microbial contagion. It will be furnished to me by the fact that the best treatment of foulbrood, recommended up to this time, is without doubt that which has to do almost exclusively with the conditions of the colony and but little with the fight against microbes. In fact, the transferring upon frames simply supplied with foundation and placed in a clean hive body, acts first by giving resistance to the colony, because it places it in the beneficial vital excitement which characterizes natural swarms at the time of hiving. It also acts as a renovator of their organisms by the salutary fasting which it determines. When man applies this process, he does a useful work, for he imitates the natural processes of renovation, by causing an artificial revolution, which is analogous to a diet and to the commotion which would be caused by spontaneous disease.

On the other hand, this treatment has but little to do with microbes, since the transferred bees retain within themselves and upon themselves infectious germs which again become silent when the colony is again placed in needed conditions of vital renovation.

As a practical conclusion, let it be understood that we must not at any time abandon measures of supervision and cleanliness, because we are never entirely certain that the power of resistance of our bees is complete. But we must bear in mind, above all things, that the preventive treatment of foulbrood must consist principally in methods of breeding, of cultivation and of nourishment inspired by natural laws, just as curing methods must be undertaken more as a work of renovation of the colonies by transferring than as an anti-microbial fight.

Soft Sugar for Baby Nuclei

BY C. S. ENGLE.

MR. ARTHUR C. MILLER caused quite a little stir among the beekeepers when he reported that he had successfully fed damp sugar to colonies of bees that were short of stores. When I came across his article it "listened" good to me, so I decided to try it.

Here at home I always keep a few colonies for breeding queens and to build cells. I mate queens in nuclei, and have either used feeders in mating boxes, in which I fed sugar syrup or kept the boxes supplied with combs of honey. After I read Mr. Miller's

article I decided that bees could thrive on damp sugar in southern Texas if they thrive on it in Rhode Island. I then set about to make mating boxes with feeders in them suitable for the feeding of damp sugar.

Here is a drawing of the mating box that I made with the feeder shown on the left-hand side. This feeder holds about one cup of sugar.

The amber sugar that I found in the stores here was very dry; I thought too dry to answer the purpose. The only damp sugar that I could get was sticky, heavy and very dark. With this sugar I did my experimenting. I brought bees home from an out-yard; I shook the bees off the combs into an empty box, covered with wire-cloth, with ripe queen-cells. I placed the mating boxes, filled the feeders with the damp sugar, and at dark I put in the queen-cells and the bees. To get the bees into the boxes I poured water over them, shook them down into the bottom of the box and dipped them out with a tea-cup. By morning they had settled down in their new homes and were at work on the sugar in the feeders. I suppose the bees get water to dissolve the sugar, for they convert it into a thick syrup and store it away in the combs.

As soon as the bees needed room a frame containing a starter of foundation was given to them. They built comb as they needed room for their stores and eggs, as soon as the queens went to laying. It was surely a good sight to look into the boxes and see the bees building comb, a young queen laying her first eggs, and bees digging away in the sugar. Here is one essential point to remember, always let the bees have a little extra room, as it will keep them from absconding. A feeder full of sugar will hold the bees as long as they have a little surplus room but if they have not the room to expand, they will soon have all of the little

combs filled with eggs, and they will leave.

There are several reasons why damp sugar is an ideal feed for mating nuclei; it stimulates the bees about the same as sugar syrup, but does not excite them nor cause robbing if it is given with proper care; it lasts longer than the same measure of syrup, and will not sour if not taken at once, as the syrup will do.

I have never fed damp sugar to full colonies of bees. Here the full colonies never need feed if they winter with good stores, unless a honey dearth comes in the early spring. At such a time I make a syrup by mixing equal parts, by measure, of sugar and water. I carry the syrup to the bee-yards in honey cans, and pour it into a trough that holds 30 or 40 gallons. A float made of strips of light weight wood is put in the trough for the bees to alight upon when they take up the syrup. After the trough of feed is ready for the bees I take a vessel of syrup, a coffee pot is best, and raise the cover to each hive and pour in some syrup. The bees come boiling out of the hive at the entrance to see where such a honey-flow is coming from. It is not long before they find the syrup and are soon busy carrying it into the hive and storing it into the combs.

A yard of 40 strong colonies will be able to carry in 40 gallons in two or three hours on a warm day. After the syrup has been taken up, it is best to equalize the stores by "swapping" combs of weak and strong colonies. Taking everything into consideration, I believe that this is the best way to feed bees for stores in warm weather. Of course, if your neighbor has bees near by you will also feed them.

Nearly every bee-man has to feed bees some time or other, especially the queen-breeder, and he will have to decide which of the several ways of feeding is the best under the circumstances.

No matter how much thought is given to the best plans, when we go to put them into practice something unexpected comes up to give them a back-set. For this very reason I am sure that all people will not succeed with the damp sugar plan of feeding bees. The ones that do succeed the best will be the closest observers.

Beeville, Tex.

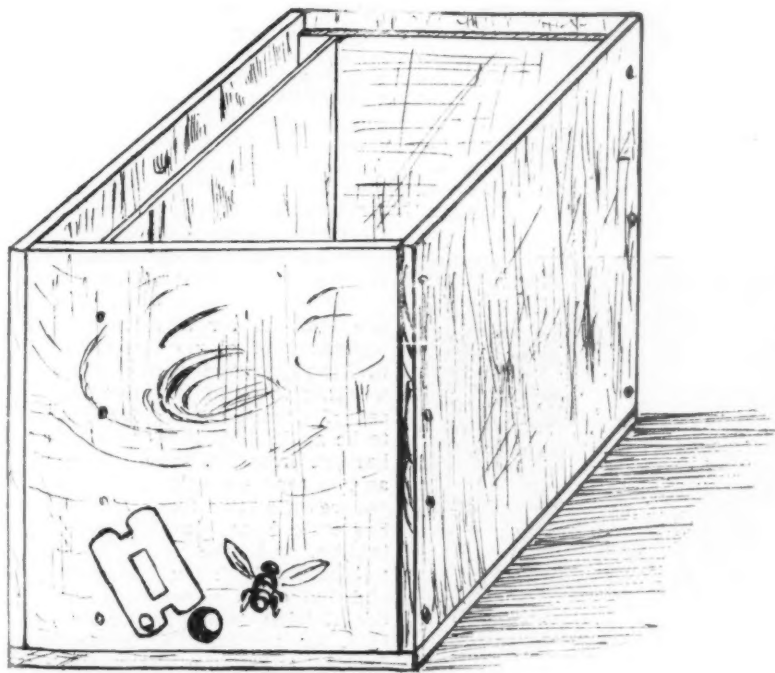
[Bees do bring in water to dissolve sugar into syrup. For that reason sugar feeding is not profitable for brood-rearing in cool spring weather in northern countries. When you make sugar syrup, if you use two parts of sugar to one of water, it will not sour readily. The syrup that sours is that which is made too thin.—EDITOR.]

The Migratory System vs. the Convertible Hive System

BY I. E. HAND.

IN AN ARTICLE on page 58, I mentioned some of the distinguishing features of the "convertible hive," and in this article will endeavor to demonstrate some of the advantages of a properly proportioned hive when operated in conjunction with a well organized system. The term "system" as applied to bee-keeping methods implies a multitude of conditions intelligently formulated into a method that meets the exigencies of the situation, and brings order out of chaos by numerous auxiliary details, all tending toward the one object "system." Depending largely upon a well conducted system for success, some apiarists ship their bees to Florida in winter at an enormous expense and no small risk, hoping to treble the number of colonies and return them in time for the harvest. If the hope of a winter harvest is the desideratum in the migratory system, it seems like staking a small fortune on an uncertainty, for locations are few where the future harvest can be forecasted with absolute certainty. If the climate is the coveted goal, and feeding is an important part of the program, it is money and time worse than wasted; for no climate and environment is better adapted for winter increase by feeding than in Ohio, and no season is so auspicious of success as right at the close of the harvest from basswood when the hives are overflowing with bees and brood.

With a properly proportioned hive operated in conjunction with a system for which it is especially designed, there is little excuse for incurring the expense and risk of an expedition to southern climes, to treble the number of colonies between two honey seasons, for it can be accomplished at a trifling expense, and no risk, right at home. Acting on the advice to "plant your guns and stand by them," I have formulated a system operating in conjunction with the "convertible hive," that solves the



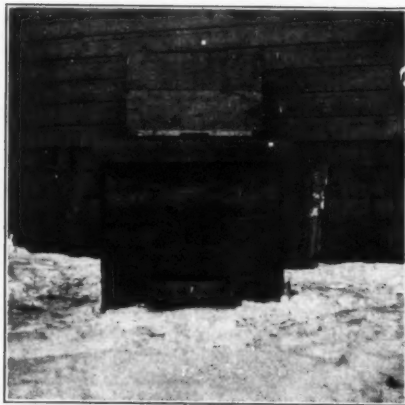
MR. ENGLS MATING NUCLEUS.

American Bee Journal

problem of the economical increase of colonies between two harvests and shatters the universal theory that increase is secured at the expense of the honey crop. Here is the system.

THE CONVERTIBLE HIVE SYSTEM.

Assuming that colonies are in convertible hives of 16 frame capacity as described in a former article, as the breeding season opens proceed to develop the fertility of the queens by giving empty combs one at a time as often as needed, placing them next to the brood without spreading the brood combs or disarranging them.



J. E. HAND'S CONVERTIBLE HIVE.

Make the brood nest snug and warm with a close fitting follower, and a warm quilt, see that they have an abundance of stores, and nature will do the rest. The hives face east with the main entrance in the center of the front side, and a small entrance in the south end, to be opened and closed as required. Both entrances are opened and contracted accordingly, to get the bees accustomed to using the end one for queen rearing operations.

The hives will be pretty well filled with brood and bees by June 1st; there will usually be a few light ones, however, and these are utilized for making nuclei, for every colony must contribute to the production of either honey or increase. Increase demands queens as well as nuclei, and herein lies the advantage of a hive of sufficient capacity to meet the exigencies of the situation. About June 1st, the bees will be gathering sufficient nectar to admit of queen rearing, and will be using the end entrance freely. Place five combs of brood and honey well covered with bees, next to the south end of the hive, including the queen, and close them in with a close fitting follower, covering them with a cloth, thoroughly separating them from the colony. Bees having the habit of using the end entrance will continue it and breeding will continue while the parent colony is engaged in queen cell building.

Prepare a sufficient number of cell building colonies to furnish all the queens needed and enough more to make up for losses, for by this method

queens cost nothing except a little time. 24 hours later, place in the center of the brood-chamber proper a frame having a cell bar with 4 grafted queen-cell cups attached, placing them in the heart of the brood nest. As soon as the cells are capped, exchange the cell bar frame for the central frame of the nucleus including the queen. On the 9th day after grafting, as many mating nuclei are formed as desired to increase to full colonies and some to spare for emergencies. These are formed by subdividing the 4 frame nuclei mentioned, utilizing colonies not strong enough for honey storing, making up the required number by utilizing combs, of brood covered with bees from full colonies not exceeding 4 combs from a colony. All nuclei including the subdivided ones are placed in separate hives, two combs in each hive, each given a ripe queen cell, closed in with a close fitting follower, covered with a cloth, and the entrance closed for 24 hours, releasing them just before dark through an exit large enough for one bee, enlarging it in two days.

We now have twice as many nuclei with queens as we have colonies, and no colony has less than 12 combs; the deficit is supplied by giving combs or sheets of foundation, placed in the heart of the brood-nest alternating with combs of brood, which will settle the swarming question. It is now June 15 and time to put on the top story with 14 extracting combs; these are spaced wider than brood combs. These strong colonies are given plenty of room in the super until about July 15 when the harvest from basswood usually begins to wane, and all supers are removed; meantime the nuclei have been strengthened by giving, to each, two more empty combs, and the four combs are filled with brood and honey, some will be queenless, and will be united with those having queens. Cage the queens in all the nuclei leaving the cages between the combs with the candy-hole exposed, and make up the full quota of 8 wintering combs for each nucleus by taking combs of brood covered with bees from the parent

colonies, taking 8 combs from each colony.

It is now July 20 and if the flowers yield nectar we will have secured a fine crop of surplus honey, trebled the number of colonies, and every colony has its full quota of 8 wintering combs well stocked with brood; the parent colonies will be the stronger in bees on account of old bees returning home, and should have less brood. In case of a late harvest from buckwheat or fall flowers, these will be self supporting, otherwise they will have to be fed for winter. Sept. 15 take an inventory of stock and see to it that every colony is immediately provided with an abundance of winter stores, and snugly packed for winter by the "convertible hive method" outlined in a former article.

It will be noticed that while those who favor the migratory system are waiting for cold weather to enable them to carry out their project at an enormous expense, and no small risk, hoping to treble the number of colonies and return them in time for the harvest, we have trebled our number at home at a trifle of the expense, and no risk, and have them snugly tucked up in their winter nest fully a month before the "migrators" start on their expedition to Southern climes; and it is safe to assume that our bees will be in better condition for the next harvest than theirs will. They are welcome to the winter harvest in Florida, for what it costs to secure it.

Increase of stock is no small part of the profit with this system especially since it costs so little and every hive is a perfect and complete wintering repository without extra equipment. As a rule, however, we favor only 100% increase in connection with a crop of honey for the following reason: It will be noticed that the convertible hive has 16 frames in summer, and 8 in winter, and less labor will place the 8 extra combs covered with bees into an empty hive, than to brush off the bees and store the combs.

If the increase is not wanted it may be sold in the spring, or two colonies placed in one hive, separated by a division-board into two distinct colonies, and the extra hives utilized for the current season's increase; one of the queens and two combs of brood are removed for this purpose at the beginning of clover harvest, and the division removed thus uniting the working force of two colonies in one set of supers during the honey-flow, to be again divided at the close of the harvest from basswood, and wintered as two separate colonies. This method ensures a strong force of workers for the early honey-flow without any attention, and the queens are not pushed for high pressure egg laying, and the extra queen is at hand for the division; whether the increase is sold, or united, the increased production will more than pay for the extra hives in one season.

For safe wintering, the 8 combs in-



VIEW OF THE CONVERTIBLE HIVE ARRANGED FOR WINTER USE.

cluding the bees are placed in a shell made of any old $\frac{3}{4}$ stuff 12 inches wide inside and 12 inches deep, without cover or bottom. Place the shell containing the bees and combs, in the center of the hive crossways, bridge the space between the outer and inner entrances, put on the top story, cover the combs, and pour in the chaff, working it down into the spaces with the hand, and fill the hive with packing within an inch of the top; this space is for the circulation of air under the cover which keeps the packing dry. This method provides for 2½ inches of packing on each side, 2 inches at each end, and 7 inches on top, with a 3 inch space under the combs, a very desirable feature not found in any other wintering hive. If one of these colonies is examined from below in the forepart of winter, the bees will usually be found clustered en masse around the bottom edges of the combs especially if the combs are as full of stores as they should be.

Such results as these, however, and similar results along other lines, are possible, only with a hive of sufficient capacity for the development of correct principles. There are several double wall chaff packed hives listed in the different supply catalogues, at prices ranging from \$3.50 to \$6.00 but none of them can compete with the convertible hive for perfect winter protection. It costs less to make a hive of this pattern than an ordinary hive of equal capacity with none of these advantages. The object of this system is to simplify methods, and minimize equipment, and if comb honey is produced it should be in double tier frames holding 8 sections preferably alternated with clean white extracting combs, for locations are few where exclusive section honey production is advisable.

Birmingham, Ohio.

No. 2.—Doubling the Yield of Surplus Honey

BY G. C. GREINER.

WITH the exception of the 4-day experience described in my former article, no steps were taken to apply the established principle to practical use that year. The season being well advanced and no definite plans for any change of management having been formulated, I finished the season of producing extracted honey in the usual way. But my mind was troubled. With the chance of great possibilities constantly looming up before my vision, I occupied my mental faculties the rest of the season and a good share of the following winter in studying up and laying plans for next season's operations.

When spring opened and the time for actual work in the apiary arrived, I set aside a number of colonies for experimental purposes, not only for extracted honey, but for section-honey also. As the demand for the latter

had somewhat increased during the last few seasons, I felt almost as much interested in its production as in my old staple-article of extracted honey. The results of my limited experiments of that season exceeded by far all my expectations. The yields of the few comb honey producing colonies, which I had set aside for this purpose, were in comparison to my former yields so astonishing, that I decided to manage my entire apiary by that plan the next season.

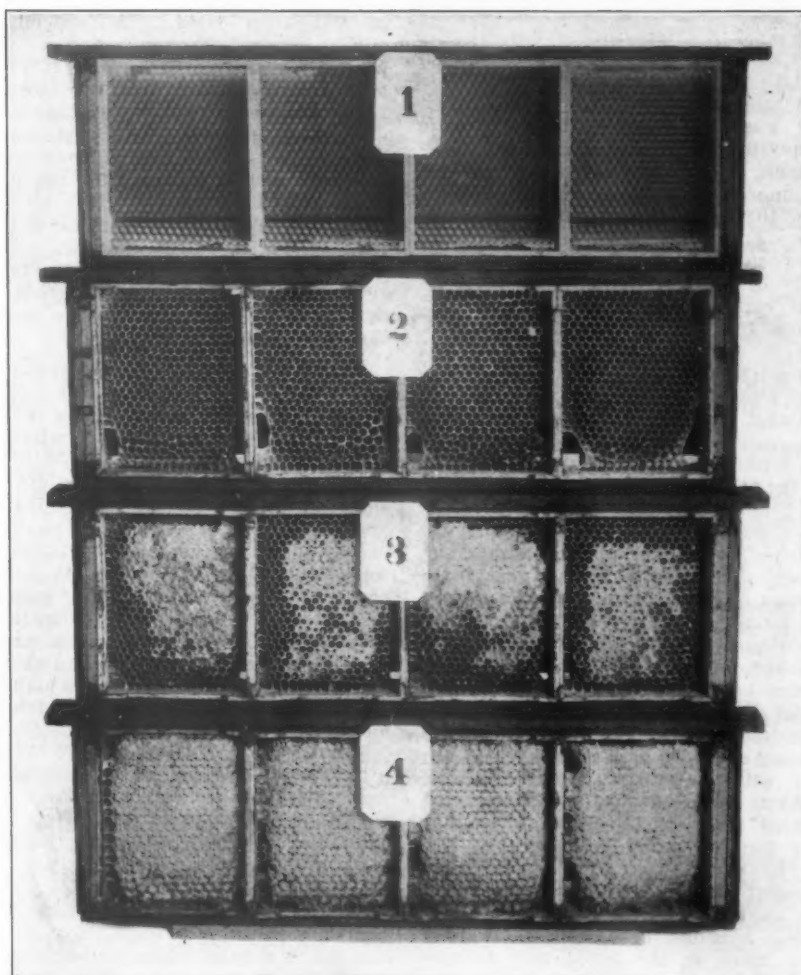
But alas! This world is full of disappointments. The year of 1911 brought me that ever memorable foul-brood campaign. Instead of conducting the continuation and completion of my experiments started the year before, I shook off 46 colonies introduced about thirty Italian queens and annihilated by fire and smoke the entire contents of those hives. Nearly all the remainder of my yard was more or less affected, but by the application of less severe treatment and the introduction of more Italian queens I managed to save them and even produced a little extracted honey.

I hardly need to tell that nearly all my energy, time and labor had to be concentrated on the extermination of the disease. In this, however, I

succeeded so, that I had quite an outfit of healthy colonies the next spring upon which to try my new method. The honey I produced that summer,—the first season I applied my theories to practical use,—brought me per colony, spring count, \$23.94 after deducting the expenses for sections, foundations, retail packages and queens. Not bad for a new method.

This last season my honey crop did not quite reach those figures, but it averaged over \$20.00 per colony. Although I took some heavier yields this year from some of my colonies than the year before, quite a number fell behind on account of my being disappointed with my queens. About 50% of them arrived two weeks later than I had ordered them and had planned to use them. This delay in receiving queens caused the same delay in breeding-up, which brought the working forces into service two weeks too late for our short clover flow.

My new method, which the two last seasons have proved a decided success, is based on the following principles: First, the more we allow and compel our bees to ripen and cap their honey during a honey-flow, the less will be their yield in numbers of



SECTIONS IN THE FOUR STAGES—PHOTOGRAPHED BY G. C. GREINER.

American Bee Journal

pounds or, vice versa, the less capping, the heavier the yield. However, capping cannot be entirely prevented, but the more we can restrict it the greater the gain. The same principle applies alike to extracted and comb honey.

To explain the philosophy of the foregoing assertion I refer the reader to the accompanying photograph. It represents four broad frames, generally called section-holders, filled with four sections each and each of the latter supplied with full sheets of extra thin super foundation and bottom starters, in the different stages of development. They were taken from the supers during and after the buckwheat flow, selected with a view of the desired stages of progress, but otherwise taken as they averaged. So far, there is nothing new in the picture, the same conditions can be found in almost any apiary where comb honey is produced, but the point the picture does not show is this: It takes bees as long to do the work from 3 to 4 as it does from 1 to 3, while the gain in the latter case is $3\frac{1}{4}$ lbs. against $\frac{3}{4}$ lb. of the former. (Although these figures are the actual weights of the four frames taken as an illustration, they would vary probably several ounces with any other similar set.) For the full super of 24 sections the difference would be $19\frac{1}{2}$ against $4\frac{1}{2}$ lbs.

It does not require very deep figuring to see that when bees are doing the capping from 3 to 4 they are simply wasting precious time of the honey flow. To make the most of the season, bees must not be allowed to do more capping during the honey flow than shown at 3. Less would be more profitable. The stage half-way between 2 and 3, when the combs are fully drawn out and filled, ready for the capping, should be our aim. When this point is reached, it is a simple matter to get unfinished sections like number 3 finished between and after the honey flows. Bees have nothing else to do during these periods, and to keep them from "loafing," likely enough study up mischief in the way of swarming, they can be kept busy finishing the work they have begun. Such a term as "unfinished sections," against which our experienced comb honey producers always caution the beginner, need not be found in the vocabulary of the bee keeper. Every section can be finished, all we need is a good bee feeder and the necessary feeding material to feed. The bottom row, 4, was finished by feeding after the buckwheat flow had ceased.

It will be noticed that those four sections are not fully bound with capped honey. I prefer them that way for the same reasons that Mr. G. M. Doolittle so ably described in a recent article. I therefore need not say anything on this point. If full-bound sections are desired, a little more time on the hives will accomplish the object.

The question, where and how to secure the required feeding material

brings us to the second principle of my method, namely: No apiary can be run for extracted or comb honey exclusively if best results are desired. The two must go hand in hand, one must assist the other. This is as essential, if doubling the yield is our aim, as it is for the dairy man to keep horses. He must have teams to run his dairy farm, just so with the production of honey. If we are comb honey specialists we need a small percentage of our colonies say from 5 to 10%, according to circumstances, to produce the necessary feeding material, and if extracted honey is our main force, a like number of colonies must be set aside to transform the unripe extracted honey, which will accumulate by my method, into comb honey. This seems at present the most advantageous use for this product.

The third principle, which my observations have brought out, is this: When the production of extracted honey is our choice, we must see to it that all colonies have empty combs in at least one super at all times during a honey flow. I firmly believe, that a prime, merchantable quality of this article can be produced only by being ripened and capped on the hive, even if it is done at the expense of a heavier yield. A few empty combs when bees are capping will partially make up this loss. It gives them a continual chance for storing. I am inclined to believe, that a much greater quantity of extracted honey can be taken from a colony by the same method as outlined for the production of comb honey than by the usual management. Instead of over 500 lbs., which my best colony, spring count, has produced this last season, 1000 lbs. may be reached. This is one of the points I intend to settle the coming season.

The fourth principle, and probably the one that brings me in antagonism with many beekeeping friends is the most essential. No bee yard, whether home or out-yard, can be left two, three or more weeks at a time to shift for itself and yield a paying crop. The bee keeper must be with his bees at least once every three or four days, oftener is better. My method, which may be termed "intense management," makes this obligatory. It may seem like spending a great deal of time with our bees and therefore objectionable. When I explained my management to a beekeeping friend he said: "I consider so much 'fussing' with bees unnecessary." Well, it is unnecessary if we are satisfied with the usual 40 or 50 lbs. But if we wish to double and treble our yield, we have to put forth the effort; the let-alone-plan will not do it. At the same time, this same beekeeper will spend precious time travelling the highway back and forth, day after day, carting bees, hives and material of all kinds from one place to another, all hard, unpleasant work, that does not increase the yield of his

bees one single ounce, while a little better management of fewer bees would greatly increase his returns.

Another beekeeper says: "With the performing of certain operations the work of that ward is done for fifteen days." A great mistake! That beekeeper does not get one-half the revenue from his yard, that a little closer attention would secure.

In the foregoing I have simply outlined the skeleton of my method. A detailed rehearsal of management would occupy too much space for this article. It will be given later. La Salle, N. Y.

An Unknown Power

BY A. F. BONNEY.

IN A RECENT number of the "Outlook," ex-President Roosevelt gives an account of his visit to the Hopi Indians in Tusayan, and includes a description of the Snake Dance, in which he makes some remarkable guesses. First, that the venom of the *Crotalus* of Arizona is not as deadly as that of the rattlers of the South, that the Indians dope the snakes, or have a power over them similar to that "some men have over bees." He asserts he knew a man who had this power over rattlesnakes, and could handle them with impunity, which was an odd claim for a man of Mr. Roosevelt's mental caliber, for no man alive ever had any "power" over the cold-blooded animals other than that attained by "taming" them.

I have in my short time on earth known three of these "Snake Charmers," and all of them were bitten repeatedly, and one died. These reptiles were so stupid they did not know one person from another, and I handled some of them as freely as did the owner, but not long at a time.

As to an unknown power possessed by some men over bees, I think the statement will make all beekeepers grin. I did, while I have much respect for Mr. Roosevelt and his attainments.

I, 15 years ago, spent a good deal of time in Tusayan, the home of the Pueblo Builders, as we call them, the remnant of a civilization older, I firmly believe, than ancient Egypt, or older than the Garden of Eden. From the evidence to be found on every side I believe our great southwest was inhabited as early as was any part of Eurasia. In the lava on the mountain side are the remains of a house. This flow of melted rock was cold untold ages ago. The Cliff Dwellings were deserted when Coronado with his soldiers went north seeking the Seven Cities of Cibola, as was the Casa Granda, a communal house so old that even the present inhabitants of the country have no tradition of its builders. I have seen the Snake Dance twice, and both times saw Indians struck by rattlers, and the men did not quit the dance, yet, believe me if you can, an hour later there was hardly a mark to show where the fangs went into the flesh.

A reason for it? There must be a cause for all things. Having never seen the Indians catching the snakes,

American Bee Journal

while I do know the reptiles, I am inclined to the opinion that the snakes are tired out by teasing, their poison sacs utterly exhausted, so that when they do make the rare blow there is little or no venom back of it. The venom of the *Crotalus* family is so deadly that there is no such a thing as making a man immune, as I believe he can be rendered immune to the poison of the bee.

Buck Grove, Iowa.

[In the article which friend Bonney criticizes, ex-President Roosevelt says exactly: "I believe that one element in the matter is that the snake priests either naturally possess or develop the same calm power over these serpents that certain men have over bees; the latter power, the existence of which is so well known, has never received the attention and study it deserves."

That many men can handle bees with almost certain impunity is a fact. I never belonged to that class. I have been in the apiary with men who would stand their ground when I was compelled to withdraw. I have seen men open hives of cross bees and the neighbors 4 or 5 rods away would have to retreat, while the operator himself did the manipulating to the end. That he was stung occasionally I know, but that he could do many things with bees which I could not do with impunity is also true. A man may be trained, or as Roosevelt says, "develop calm power over bees," yet there is something in some men which makes them succeed better in this than others.

An old gentleman in our vicinity, Uncle John Wright, long ago deceased, used to amuse the young people by inviting dozens of them to his home in long winter evenings and practicing "magnetism," or what the French call "suggestion" upon them. I did not believe in this queer power until he told me that he was sure I could do the same thing myself. I tried and succeeded. I have since found that it is "hypnotism," that hypnotism is a branch of psychology. There is not so much in it as some people would have us believe. Very certainly there is not so much in hypnotic power over bees, as some persons imagine. However this same Uncle John Wright told me that it was practical to hypnotize the bees, that if after opening a hive, without smoke, but carefully, I should boldly lay hands over them, as they appeared at the top of the combs, I would see them retreat and finally become submissive. I tried it but failed ignominiously. But an apiarist who was at the time working for me in the apiary, and who was noted for his re-

markably slow ways, tried it after I did and succeeded.

We gave notice of it in paragraph 385 of our latest edition of the Langstroth-Dadant book. I have since occasionally succeeded in causing the bees to retreat before a "laying of hands," but I would not urge any one to depend upon it. Bees once aroused become very vindictive. I believe that the beekeeper in such cases should do what the Indians are reported to do, by Mr. Roosevelt, in this remarkable article, try to soothe them as the Indians try to soothe the snakes. But the procedure is very different in the one case from what it must be in the other.

I have seen it stated, years ago, that the poison of the bee, if it existed in as large quantities as the poison of the rattle-snake, would be more deadly than the latter. I do not remember the authority, but it was stated that the poison of the snake could be taken with impunity within the digestive organs while that of the bee could not. This is a matter for doctors and scientists to pass upon. But if inoculation has achieved such prodigies, in the prevention of small-pox, or chicken cholera, of hydrophobia, etc., why could it not have effect in the case of rattle-snakes? We know positively that we become almost immune to the bee-poison. I, myself, cease swelling after a few days of beekeeping.—EDITOR.]

Beekeepers I Have Known— "Edward G. Brown"

BY FRANK C. PELLETT.

ED BROWN came into intimate contact with the bees early in life; for when he was 2 years of age he went out and sat on a hive and began drumming with his heels. A short time later he was picked up by a kindly disposed neighbor woman who took him to the house, picked out the barbs and rubbed him down to something near his normal size. The mischief was done, however, for the formic acid was in his blood, and he was started on his life work.

The senior Brown was a pioneer beekeeper, and one of the first to take up the business on an extensive scale in this section. When Ed's mother came home as a bride she found a few colonies of bees in box-hives. When toward winter, her husband following the custom of the time, brimstoned the heaviest colonies over a pit, she protested that there must be a better way; that the surplus honey should be secured without killing the bees. Mr. Brown contended that it was as necessary to kill the bees to get the honey as to kill an animal to get the meat.

She was not satisfied, and soon after was attracted by an advertisement of a little journal devoted to bees. That

same winter she became a disciple of A. I. Root, and purchased a few simplicity hives. The following season the Browns secured a phenomenal honey crop and increased their colonies proportionately. At this time the family were engaged in the dairy business near the present home of the younger Brown, and had considerable capital invested in a cheese factory. This was before the days of fenced pastures, and everybody's cattle ran at large. About this time the dairy business was ruined by low prices and an epidemic among the cattle of the



EDWARD G. BROWN.

neighborhood. The elder Brown turned his attention seriously to his bees, and from that time until his death was an extensive honey producer.

At the age of 16 the subject of our sketch left high school and took immediate charge of the apiaries belonging to his father. He increased the number of colonies from about 300 to 500, and produced honey by the carloads, some seasons getting in the neighborhood of 20 or more tons. He has kept bees constantly since that time.

While still one of the youngest among them, he is one of about a half dozen of the biggest honey producers of Iowa. Aside from his business as a honey producer, he is associated with others in a large honey-marketing business in Sioux City, handling not only the product of the apiaries of the persons interested in the business, but doing a large jobbing business as well.

Mr. Brown's home and family life seem to be ideal. Besides Mrs. Brown there are the two boys growing up to be beekeepers.

Atlantic, Iowa.

The Bees' Product.—The following is from the April Gas Review: "The bees are the greatest workers in the world. In this country alone, during the past year, three hundred billion bees produced enough honey to fill a train of cars long enough to reach from New York to Buffalo."

DR. MILLER'S



ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Best Method of Increase

As I am only 25 miles from you, please recommend the best method of *increase* and still get a crop of honey for our locality. Have your "Forty Years Among the Bees."

ILLINOIS.

ANSWER.—There are so many different circumstances and conditions that it is not easy to say what one system is best. What is best one time may not be best another. In the book you mention the matter of increase is discussed as fully, at least, as in any book I know of. After a careful study of what you find there, you will be able to decide for yourself better than I could decide for you. If, however, I were obliged to confine myself to any one plan, with the idea of interfering little with the honey crop, I think it would be the nucleus plan. With that you can make much or little increase, and you need not draw from one colony enough to hinder it from doing fair work in supers. But if by "still get a crop of honey" you mean to get as much as if you got no increase, I don't believe you can make it in your location. That only happens where there is an important fall flow.

Large Hives in Winter

Some beekeepers advocate taking out the two outside frames in an 8-frame hive and putting in their place chaff-filled dummies for wintering. Now that leaves only six frames in the hive for the colony to winter on. You advocate a very much larger hive, and some go so far as to advocate a 17-frame hive. What do you do with all the large space in your hive in the winter; or, in other words, what would you do with it if you wintered your bees on the summer stands?

2. How can I manage with my 9-frame hives and give them plenty of stores for winter and spring and yet have room for two chaff dummies at the outside?

3. Would you use these dummies or would you use two frames of sealed honey in their stead?

NEBRASKA.

ANSWERS.—1. We rarely reduce our hive in the winter. However, with our large hives, dummies may be put on each side of the frames leaving an ample supply.

2 and 3. With hives of the size you mention, we would put the sheltering dummies on the outside. In other words, we would leave in the hive all their frames, if filled with honey, and we would place windbreaks or packing of some kind on the cold sides, leaving the front or south side exposed. This method which has given us satisfaction may not be suitable for damp countries or for countries much farther north. Each climate requires methods adapted to it.

Bee-Escapes—Best Bees—Splints, Etc.

1. I run my bees for extracted honey. How can I free the supers of bees without having to brush every comb? I do not care to use the Porter bee-escape board if there is any other way.

2. In making a few special crosses can I not take a colony with special drones, also the nuclei with virgin queens late in the evening and put them in a dark cellar, keeping them there until all drones have stopped flying on the following day, and then bring my colony of special drones and nuclei out for a flight, repeating this several times if necessary? Will this plan work?

3. What plan do you use in rearing queens at the present?

4. What race of bees will gather the most honey regardless of faults?

5. Can I put frames with full sheets of foundation between two combs and get good worker combs that are not stretched too much at the top? I mean without wiring?

6. Is there any danger of getting too much water in the honey when uncapping knives are kept in boiling water, using first one knife and then another?

7. Do you know of any two beekeepers who think exactly the same about any one subject concerning bees?

8. Would you consider a location where bees start to swarming the last of April and continue until about the middle of July a bad location?

VIRGINIA.

ANSWERS.—1. You could use some other escape, as the Miller tent-escape. It consists of a robber-cloth with a cone of wire-cloth centrally located.

2. Yes, this plan has been in use for a good many years, yet it is not very generally followed if I am not mistaken. You should feed the bees when you set them out, so as to start them to flying.

3. The same I have used for years, as given in "Fifty Years Among the Bees" and in previous numbers of this journal. The colony with the best queen is allowed to build comb, the queen laying in this virgin comb, which is then given to a queenless colony.

4. Probably none will exceed the Italians, although others may do as well, and with the right kind of care and selection hybrids may do as well as pure stock.

5. You may by using foundation splints or very heavy foundation. Even then you will not always get the best results between two drawn-out combs, for too often these combs will be bulged into the comb between them.

6. Practically no danger.

7. Yes, lots of them. But I am not sure I know any two beekeepers that think alike on all subjects concerning beekeeping.

8. It might be bad and it might be good.

Miscellaneous Questions

1. I have at present 8 colonies of bees, and I do not know whether they are blacks, hybrids, or just what they are, but they seem to be rather disinclined to work and over anxious to swarm. Last year from the 4 original colonies I secured 11 swarms. I would like to requeen some of them with Italian queens and see if this will not make them better honey gatherers and more gentle. I did not get any surplus last year, and what little honey was stored in the supers I did not remove, as I thought they would need that to help tide them over the winter. As it has been a rather severe winter for us, I think I did right.

2. About what time should the new queens be introduced?

3. Would you recommend the 3 or the 5 banded Italians?

4. Do you think any other race of bees would be more suited to this part of the country than Italians?

5. Please give me the method of fixing foundation (full sheets) in frames with wires. Also starters, say 5 or 6 inches deep.

KANSAS.

ANSWERS.—1. I am wondering whether you had last year one or several good bee-books and had become familiar with their contents. If you had, you hardly would have allowed 11 swarms to issue from 4 colonies. And the difference in results might have

paid for a number of books. *For example* a bee journal may be, it is only supplementary to the teachings of a text-book. You could easily have kept the number of swarms down to 4 in all probability. When the prime swarm issues, hive it and set it in place of the mother, setting the mother close beside the swarm. A week later set the mother 10 feet away or farther. That's all.

2. The best time was last fall. But since you didn't it is not best to wait until next fall. You can do it in fruit bloom. But it will probably be better to wait 2, 3, or more weeks longer, when the main flow is on.

3. There are 3-banders better than the majority of 5-banders. Also, there are 5-banders better than the majority of 3-banders. On the average you are likely safer with the 3-banders.

4. Very doubtful.

5. To give very full directions hardly comes in the scope of this department, but if you don't happen to find it in a book I may say briefly that if you have top-bars with kerf and wedge, it will be easy to insert the upper edge of the sheet in the kerf, and then push in the wedge *deep*. Then one of the ways of fastening the wire in the foundation is with the spur wheel, during the work in a very warm room, so the foundation will be soft. If you have no kerf in top-bar, then run melted wax along the joint between the foundation and top-bar.

I don't want to tell how to put in 5-inch starters, because I don't want to use them. No economy in it. You will have entirely too much drone comb. "You're going to put them in anyhow?" Oh, all right, then. Put them in exactly the same as full sheets.

Stimulative Feeding

1. I want to have my bees strong enough at the beginning of clover bloom (which begins here about June 5 to 10) to fill two 10-frame dovetailed bodies. My bees will have plenty of good sealed white honey. Can I gain anything by feeding sugar syrup?

2. If so, what proportion of water would you recommend to the sugar?

WISCONSIN.

ANSWERS.—1. I believe good honey is better food for bees than sugar syrup. Hence, other things being equal, to get them to take sugar in place of honey would be a damage. There are places where there is such a dearth between fruit bloom and honey that brood-rearing ceases entirely, even with abundance of honey in the hive. In such a place it pays to feed enough to keep up brood-rearing. Even then, it is better to feed honey than sugar, or to scratch or uncapped the combs of sealed honey. But I don't believe you have that kind of place in your part of Wisconsin. If there is abundance of honey in the hive, and if there is as much brood in the hive as the bees can cover, what can you possibly gain by feeding?

2. If the bees should run short of stores early in the season, and for lack of good honey you should be obliged to feed sugar syrup, use equal parts of sugar and water, either by weight or measure.

Foul Brood?—Probably Starvation

I have 16 colonies of bees; had 20 last spring, but on account of late frost killing the early flowers, they did not begin rearing brood until very late in the spring, and the honey flow was almost a complete failure. In August something went wrong with the brood in nearly all of my colonies; probably it was foul brood. The brood would die and seem to be getting along all right until just a few days before hatching when the bees would begin carrying it out. Almost all of the brood would still be alive when carried out. It could not have been American

American Bee Journal

foul brood, as there was no odor, and the cell caps did not turn dark and sink as in European foul brood; and it could not have been for want of room, as the hives were not near full of brood and honey.

WEST VIRGINIA.

ANSWER.—It looks like a pretty plain case of starvation. You say there was plenty of room, the hives were "not near full of brood and honey," and my guess is that they ran out of honey altogether, and the bees dragged out of the hives the white skins of the larvae after sucking out the juices. You say the most of the brood would be alive when dragged out. There would hardly be any young workers that would show signs of life, for the bees would suck out the juices before they were old enough for that; but they would tear open the drone-cells and drag out young drones that could crawl.

Snow—Swarming—Cellar Feeding

1. Is it necessary to keep snow and ice swept away from the entrance of hive?
2. Is it a good plan to have the queens' wings clipped to prevent loss of swarms?
3. What time do bees generally swarm?
4. What can one do to stop mice from entering the hives in the winter time?
5. What time can bees be fed that are wintered in the cellar?

NEW YORK.

ANSWERS.—1. As long as it remains dry and hard, a little snow at the entrance is not likely to do any harm. But if it becomes wet and soft, filling the entrance and then freezing, it may do harm, so it should be cleared away before it has a chance to freeze. Not that there is special harm from the freezing, only that it allows the entrance to remain closed.

2. Yes, excellent.
3. In your vicinity the most of the swarming is likely to occur in June.
3. A good way is to close the entrance with wire cloth having three meshes to the inch. That allows the bees free passage but bars the mice.
5. Any time rather than have them swarm; but the feeding should all be done before putting in cellar.

Uniting—Shake Swarming—Bee Trees

1. In the American Bee Journal for February, on page 62, you state in your answer to "Maine," that a safe way to unite two colonies is to place one on top of the other with paper between them. Can I do this without killing one of the queens?
2. If there is a queen in each colony, do they live together?
3. What is meant by a shake swarm?
4. My bees are coming in from the fields with their legs loaded with pollen, and there is nothing in bloom here but red elm and a few little wild flowers. Do you think they will work on red elm?
5. I have a bee tree near my house containing a large swarm of pure Italian bees that got away from me last May; the tree is of no value. How should I proceed to save the bees and when should I cut the tree?
6. When is the proper time to sow white and sweet clover seed?

OKLAHOMA.

ANSWERS.—1. Yes, if you have no choice as to queens you can leave it to the bees to settle the matter.

2. No; one or other of the queens will be killed.
3. When the bees are shaken or brushed from their combs, and all the combs, or all but one of them, are taken away, that is called shaking a swarm, and the bees left in the hive are called a shaken swarm.
4. I think bees work on any of the elms. They may also be working on something else that you know nothing about. Bees can beat us humans a long way at finding nectar or pollen.
5. If the tree stands out, away from other trees, you will cut it down same as any tree, and take your chance of the combs being

mashed to pieces. If other trees are near, perhaps you can fell it against one of them in such a way as to break the fall. Or, possibly you can by means of ropes attached to other trees soften the fall. Then you can saw or chop off the tree above and below where the bees are, and take the log-hive home, or you can split open the tree and cut

out the combs and fasten them in the frames of a proper hive. The best time to operate was last fall as soon as the bees stopped storing. As it is too late for that now, wait for warm weather in the spring when bees fly freely.

6. When farmers in your vicinity sow red clover, alsike, or alfalfa.

REPORTS AND EXPERIENCES



Report from Tennessee

Bees are wintering nicely so far. I have 28 colonies. Last year we had a dry season and pasture was short until sourwood came in bloom. My crop of honey was light, about 40 pounds to the colony. I use 8-frame hives. Athens, Tenn. J. W. CARTER.

Hauling Bees With Entrances Open

I have about 100 colonies of bees, but as I am afraid to risk more than 20 or 25 colonies in one place for fear of overstocking the range, I have a considerable amount of hauling to do in locating out-apiaries in the spring and bringing the bees in to winter. Almost all men advocate the idea of stopping the bees' entrances so they cannot get out. I have been hauling bees for 8 years, and I never stop the entrances up, and I always haul in the day time if I am not crowded with some other work.

I generally load my bees at night or after a shower of rain, in order not to lose the field bees, but in both instances I smoke the bees good before I start out on my journey, and I never have had any trouble. If I make a stop it is necessary to smoke the bees before starting again. Of course you can't stop very long or your bees will come out and go to work.

I bought 6 colonies in box-hives from a man who lives about 18 miles away, and when I went after them they were at work on the elm buds, so I smoked them, loaded them, and got home safely, though I had lost the top from two of the hives. I don't think that I ever saw a quieter bunch of bees. Wingate, Tex. L. L. ALLEN.

Giving Bees Water

I have received so much help from reading good articles contributed by many beekeepers that I wish to offer what I can in return.

We lose many bees by drowning while they take water from ponds and water

tanks, and the drier and hotter the weather the more water the bees must have. In times of drouth they become a nuisance around the stock tanks. Most water tanks are now made of steel and with vertical sides, making a death trap for the bees by drowning. We dislike to see so many of them drown, or to have them bother our neighbors. I finally hit on the following watering device:

I took an oak barrel and sawed it in two in the center. The half barrel made my watering device. I tacked burlap sacking material all over the tub, allowing it to hang inside loosely, so when the tub was empty the burlap covering hung almost to the bottom of the tub. Just before I finished tacking on the covering, I put a sealed Mason jar inside the tub and under the burlap for a float to keep the burlap on the surface of the water.

The bees began to use water from the tub at once, and ceased to bother our stock tank. They liked this watering device so well that it was just like a swarm at all times. They took away probably 20 gallons every day during the hot dry summer. The tub was located about 100 yards from an apiary of 225 colonies. Not a bee was drowned at this tub, and they also quit bothering my neighbors' water tanks. H. C. GADBERRY.

Miami, Mo.

Trying Hand's Method

I made up a couple of hives according to Mr. Hand's latest, and put them to work in the hope that they will solve my wintering problem in this province. A local bee-man told me a few days ago that 20 years ago a Scotsman called Robertson, now long dead, worked out the same scheme for Victoria, and swore by it. I will report how it behaves with me. F. DUNDAS TODD.

Victoria, B. C., Feb. 25.

Note from British Columbia

I imagine I see some of the veteran bee-men smiling at the rapid increase a begin-



SNOW-BOUND APIARY OF H. C. GADBERRY, AT MIAMI, MO.
Honey-house in the back-ground.

American Bee Journal

ner can make up here in this part of Canada, as given in my communication on page 380 of the American Bee Journal for November, 1913. Instead of "increased from one to one hundred and five in two years," it should read "increased from one to one hundred and five in two years and two months," which practically means three seasons.

I have gotten over the increase fever, and last season I employed a practical apiarist to run my bees for honey, as I had had practically no experience in honey producing, and thought I could learn something. I did, but I did not get as much honey as I anticipated, owing principally to weather conditions.

I have been working for a cross between the Italian and Carniolans, which, I think for this climate, are just right. I have had some beautiful golden Italians, which would come out fairly strong in the spring, but would dwindle along all spring and do practically nothing all season; on the other hand my pure Carniolans kept me busy either dividing or hiving swarms.

In crossing, I supplied about 10 Italian queens to one Carniolan, which proportion I found necessary to keep an equal division of blood. Those crosses produced comb honey last season, which was beautiful, being well filled and the cappings snow white. My assistant, an Englishman who has several medals won for comb-honey production in his home land, said some of this comb would be hard to beat anywhere. The bees are fairly gentle, and if they are in any kind of fair shape in the spring, the apiarist need have no fears of spring dwindling.

D. E. McDONALD.

Rutland, B. C., Feb. 16.

Prospects Favorable in Washington

We have had a very mild winter. At no time has the ground been frozen deeper than about one inch. There has been very little sunshine during the past three months, and an unusual amount of precipitation, some of it in the form of snow, but the greater part rain. While the weather has been mild, still there have been few days with sufficient sunshine and warmth to coax the bees out, and at this date, March 2, they are in apparently fine shape, with the greater part of their winter stores untouched and ready to be transformed into countless workers for the coming harvest. Practically all bees here in the Yakima Valley are on the same stand summer and winter, and usually without added protection for the winter months. They will consume from 15 to 20 pounds more honey than the colony in a cellar in Illinois or Iowa. Our greatest winter trouble, as it appears to me, is too many summer days in the winter months, days when the bees will convert a lot of good honey into unprofitable and misdirected energy, such as scrapping with their neighbor or hanging around the grocer-man's back door.

The past winter has had very few summer days, and all of the beekeepers that I have talked with report their bees in splendid shape.

While it is too early to count the chickens, yet we are encouraged when we know that the old hen is sitting on fertile eggs.

A. E. BURDICK.

Sunnyside, Wash., March 2.

Loss of 4 Out of 208 Colonies

Bees have wintered nicely here, only lost 4 out of 208 colonies wintered on the summer stands. The weather is warm, and the bees are pretty busy now. I saw some carrying in pollen yesterday, but do not know where they got it. We have had plenty of rain, so we look for a good crop again this year.

Delta, Colo.

GEO. F. LESTER.

To Missouri Beekeepers

I accepted an invitation from Dr. L. Haseman, the entomologist at our Experiment Station, to come over during farmers' week to have a bee-meeting there. I found there my old friend, E. J. Baxter, of Nauvoo, Ill., whom I was pleased to meet again. The appointed meeting came off with a very good audience, and Dr. Haseman gave a splendid talk on bees and their different races, and the various kinds of appliances used; after which the writer also had a lengthy talk, and friend Baxter made a most interesting and profitable speech. The beekeepers in the audience asked questions and showed that they were interested.

Dr. Haseman has taken up bee-culture a

the station, to teach the pupils who are interested. He had some ten members in his class last season, and expects perhaps to double that number this time. This work is taken up towards spring. They have a few bees at the station, for demonstration only. Our State association is interested in this work, and we want to give it all the encouragement possible, as we hope it may be of much help in time, more especially to the young generation, as they enter life's duties. We may have some great beekeepers coming from this work. We hope so.

The committee appointed to investigate the matter of incorporation for our State Beekeepers' Association are at work with their duties, and the secretary, Mr. Diemer, writes me that he hopes to succeed, but we must have more help than we now have; otherwise it would put considerable burden on a few, for it takes some expense to incorporate.

A great number of beekeepers of the State will see this. Now won't you send your membership fee right away to the writer, or, better still, to the secretary, Mr. J. F. Diemer, of Liberty, Mo.? It is only \$1.00, and you owe it to yourself, as well as to the bee-industry of the State, to help the cause. Our State has a splendid record as a honey-

producing State, but we do not have the membership we should have in our association. We hope to get a better appropriation to do inspection work, to eradicate foul-brood which is gaining fast in the State, as we have not had enough inspectors in the field. Then we hope to get enough appropriation to publish our reports and give much valuable knowledge and information on beekeeping. Many other States are doing this, and Missouri should not be left behind.

It depends largely upon you, dear reader; do not let others bear the burden and take no part in it yourself. If many do their duty it will not be a burden on any one. May we not hope you will do your part.

J. W. ROUSE.

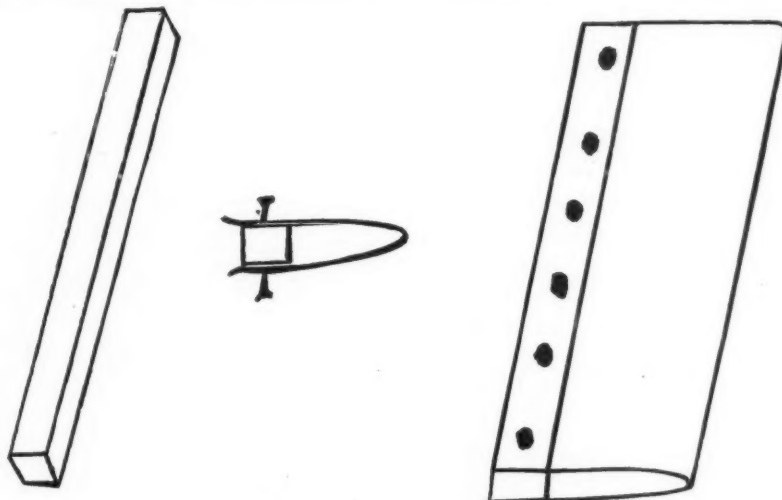
Pres. Missouri State Beekeepers' Association.

An Entrance Stopper

Here is the kind of an entrance stopper I use: Rip off a piece of pine board $\frac{1}{2}$ inch thick and $14\frac{1}{4}$ inches long. Cut a piece of wire-cloth $6 \times 14\frac{1}{4}$ inches and bend it V shape. Put a strip of wood $\frac{1}{2} \times \frac{1}{2} \times 14\frac{1}{4}$ between the two edges and tack both sides. When the entrance is closed with this stopper the bees can get plenty of air.

Elizabeth, Ill.

HENRY PRICE.



HENRY PRICE'S ENTRANCE CLOSER.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

BEEES AND QUEENS.

QUEENS, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, \$8.00; Select, \$1.00 each; dozen, \$10.00. Tested Queens, \$1.25; dozen, \$12.00. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

FOR SALE—Choice Golden Queens that produce Golden bees equal to any. Wm. S. Barnett, Barnett's, Virginia.

PHELPS' Golden Italian Queens will please you.

BEEES AND QUEENS from my New Jersey apiary. J. H. M. Cook, 1 Atf 70 Cortland St., New York City.

GOLDEN all-over Queens. Untested, \$1.00. Tested, \$3.00. Breeders, \$5.00 and \$10.00. 2 Atf Robert Inghram, Sycamore, Pa.

WANTED—To sell untested queens from my Superior Strain of Clover Italians in quantities. I. F. Miller, Brooksville, Pa.

1014 QUEENS—Moore's strain of leather-colored Italians. In April at 75c. Bees by the pound and Tested queens. Write us for prices on nuclei. Address, Ogden Bee & Honey Co., Ogden, Utah.

ITALIAN QUEENS—Bees by lb, Descriptive List free. Apiaries under State inspection. Leaflets, "How to Introduce Queens," 15c. "How to Increase," 15c; both, 25c. 2 Atf E. E. Mott, Glenwood, Mich.

QUEENS—10 percent discount for orders received before May 1, to be filled in May and June. Tested, \$1.00; untested, 75c. Dead ones replaced free. 2 Atf S. Click, Rt. 2, Box 16, Mt. Jackson, Va.

PHELPS' Golden Italian Bees are hustlers.

CALIFORNIA'S Golden and 3-banded equal the best. Try them March 1. No. culls. Tested, \$1.25 to \$2.50. Select mated, one, 75c; 12, \$8.00; 50, \$32; 100, \$60. W. A. Barstow & Co., San Jose, Calif.

ITALIAN QUEENS, 5-banded, for sale. Ready April 15. Untested queens, 75c each, or \$7.25 per dozen. Safe arrival guaranteed. W. W. Falley, Queen Breeder, 3 Atf Rt. 4, Greenville, Ala.

QUEENS bred from Moore's and Doolittle's best Italian stock. Untested, 60c each; \$6.00 per dozen; \$50 per 100. Tested, 90c each; \$9.00 per dozen; \$80 per 100. Delivery guaranteed. Book orders now. Nuclei any quantity; 2-frame, \$1.50; 3-frame, \$2.00. Add price of above queen wanted. Spencer Apiaries Co., Nordhoff, Calif.

American Bee Journal

ITALIAN Queens after May 1. Virgins, 25c. Mated, 50c. Please book orders 3 weeks early. John Robbins, Mesilla Park, N. Mex.

READY after April 20. Good Italian Queens. Tested, \$1.00; untested, 75c. Satisfaction guaranteed. G. W. Moon, 1904 Adams St., Little Rock, Ark.

ITALIAN Bees in 10-fr. dov. hives. Moore's strain, good condition, warranted free from disease, \$6.50 per colony. N. P. Anderson, Eden Prairie, Minn.

PURE Golden Queens, the best that twelve years can produce. Untested, \$1.50 each. Select tested, \$3.00 each. Breeders, \$5.00 to \$50. Send for booklet on "Bees and Diseases." Geo. M. Steele, 30 South 40th St., Philadelphia, Penna.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Golden and their honey-getting qualities. Price, \$1.00 each; Tested, \$2.00. Breeders, \$5.00 and \$10.00. 2Atf J. B. Brockwell, Barnett's, Va.

STRONG colonies of Italian bees with tested Italian queen in complete new hive. \$10. Nucleus colony, \$4.00. Tested Italian queen, \$1.50. Write for prices on quantity. I. J. Stringham, 105 Park Pl., New York, N. Y. Apiaries: Glen Cove, L. I.

QUEENS ready in May. J. E. Hand strain of three-banded Italians. Bred for gentleness, honey gathering, wintering, and long life. Write for price list and free booklet, "How to Transfer." Get honey and increase. 4Atf J. M. Gingerich, Arthur, Ill.

THE BANKSTON Bees and Queens are as good as the best. Golden, Three-band and Carniolan. Tested, \$1.00 each; untested, 75c. Queens ready to ship April 15. Bees, per pound, \$1.50. Nuclei, per frame, \$1.50. Write us for prices on large lots of queens. Try us and be pleased. Bankston & Lyon, Box 141, Buffalo, Tex.

GOLDEN and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, \$1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., \$1.50; Nuclei, per frame, \$1.50. C. B. Bankston, Buffalo, Leon Co., Tex.

WE requeen our bees every year with best Italian stock to prevent swarming. We offer the one-year old queens removed from these hives at 50c each; \$5.40 per doz.; \$40 per 100. Delivery guaranteed. Book orders now. Nuclei any quantity; 2-frame, \$1.50; 3-frame, \$2.00. Add price of above queens wanted. Spencer Apiaries Co., Nordhoff, Calif.

DUNN's Golden Italian queens, bred strictly for business that produce a strong race of honey gatherers. March 1 to Oct. 15. One, mated, 75c; 6, \$4.25; 12, \$8.25; 50, \$32.50; 100, \$60. L. J. Dunn, Queen Breeder, 2Atf Box 337 G, R. R. 6, San Jose, Calif.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; Tested, \$3.00; Breeders, \$5.00 and \$10. C. W. Phelps & Son, 3 Wilcox St., Binghamton, N. Y.

FOR SALE—Moore strain and Golden Italian queens. Untested, \$1.00; 6, \$5.00; 12, \$9.00. Carniolan, Banat and Caucasian queens: Select Untested, \$1.25; 6, \$6.00; 12, \$10. Tested, any kind, \$1.50; 6, \$8.00. Choice Breeders, \$3.00 to \$5.00. Circular free. W. H. Rails, Orange, California.

CALIFORNIA ITALIAN QUEENS—3-banded and Golden by return mail after March 15. Select untested, one, 75c; 12, \$8.00. Tested, \$1.00; breeder, \$3.00. Bees by the pound, a specialty, ready April 1. 1 lb., \$1.35; 2 lb., \$2.50. Delivery and satisfaction guaranteed. Correspondence solicited. Circulars free. J. E. Wing, 155 Schieler Ave., San Jose, Calif.

THREE-BANDED and Golden Italian queens. Ready March 1. They have been bred for three points, prolificness, gentleness and honey-gathering qualities. Prices, Select Untested, 75c each; 6, \$4.25; 12, \$8.25; 50, \$32.50; 100, \$60. Tested, \$1.50; Select Tested, \$2.00. Garden City Apiary Co., R. R. 3, Box 86, San Jose, Calif.

QUIRIN's Famous improved Italian queens are northern bred and extremely hardy; over 20 years a breeder. Colonies, Nuclei and bees by the pound. Ask for Circular, it will interest you. H. G. Quirin, The Queen Breeder, Bellevue, Ohio.

FOR SALE—3-banded Italian queens, nuclei and bees by the pound. Being large honey-producers, we breed hustlers. Untested queens, each, 75c; tested, \$1.25. Without queens, 1 pound of bees, \$1.25; 2-frame nuclei, \$2.50. Write for a complete price list. 2Atf Brown & Berry, Hayneville, Ala.

FAMOUS North Carolina Bred Italian Queens for sale (red clover 3-banders). Honey-gatherers good as the best. Strictly reared from Geo. B. Howe's best breeders; mated with Root's, Moore's, Davis' Select Drones; bees that get the honey. Free from disease. Untested, one, 75c; per doz., \$7.50. Select untested, one, \$1.00; per doz., \$10.00. Tested, one, \$1.25. Select tested, \$1.50. Extra select tested, \$2.00. Breeders, \$3.00 and \$5.00. H. B. Murray, Liberty, N. C.

THREE-BANDED Italian Queens. Before July 1st, untested, one, \$1.00; 6, \$5.00; 12, \$9.00. Select untested, one, \$1.25; 6, \$6.25; 12, \$11.11.

After July 1st, untested, one, 75c; 6, \$4.00; 12, \$7.00. Select untested, one, \$1.00; 6, \$5.00; 12, \$8.50. One-frame nuclei, 75c; 2-frame, \$1.50; 3-frame, \$2.25. To each nucleus add price of Queen. Our Queens are reared in a locality where there has never been disease, and reared from strong vigorous colonies. The apiary is under most competent supervision. Safe arrival and satisfaction guaranteed. Horner Queen & Bee Co., Ltd., Youngsville, Pa.

HONEY AND BEESWAX

"NULL'S FAMOUS MELILOTUS HONEY." Sample for stamp. Null Co., Demopolis, Ala.

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co., 6A12t 173 S. Water St., Chicago, Ill.

FOR SALE—No. 1 white comb, \$3.00 per case fancy, \$3.25; 24 Danz. sec. to case, and 6 case; to carrier. Wiley A. Latshaw, Carlisle, Ind.

FOR SALE—400 lbs. good Buckwheat Honey in 5-lb. pails; well ripened. Will take \$40 for the lot to clean up for the season. M. C. Silsbee, R. D. 3, Cohocton, N. Y.

COMB HONEY wanted all the time; also cheese, potatoes, onions, cabbages, beans and fruits. W. W. Marmaduke, Washington, Ind.

FOR SALE—Choice extracted honey, thick, well ripened, delicious flavor. Price, 9c per pound in new 60-lb. cans. Address, 2Atf J. P. Moore, Morgan, Ky.

DEALERS and producers who buy honey kindly ask for a late number of the Review, giving a list of members having honey for sale. Many carloads are listed in each number. Address, The Beekeepers' Review, Northstar, Mich.

\$1000 (one thousand). I will pay the above amount in cash for one pound of honey that is equal to my Red Ripe (Harnessed Sunbeams) Honey in digestibility, nutrient, value or flavor. Samples and prices free. C. W. Dayton, Owensmouth, Calif.

EXTRACTED HONEY—Best pure Illinois. White Clover and blends with Sweet Clover. Amber Fall and Spanish-needle grades. Also fine Western Water-white and Light Amber Alfalfa. All packed in 5, 10 and 60 lb. cans. Some in barrels. Samples and prices free. Dadant & Sons, Hamilton, Ill.

SUPPLIES.

FOR SALE—Root's goods and Dadant's foundation at factory prices. Spencer Apiaries Co., Nordhoff, Calif.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., 4Atf Greenville, Tex.

BETTER HIVES FOR LESS MONEY—Bee keepers' supplies and standard-bred Italian bees. Write for catalog. A. E. Burdick, Sunnyside, Wash.

THE A. I. ROOT COMPANY'S Canadian House, Dadant's Foundation, Poultry, Supplies, Seeds. Write for catalog. The Chas. E. Hopper Co., 185 Wright Ave., Toronto, Ont.

FOR SALE—New 10 frame hive bodies in flat; made of white pine; corners halved; nailed like dovetailed hives; are cheap. Write to H. F. Maeder, Rt. 4, West Bend, Wis.

REDWOOD hive bodies, 25c each. Improved (melted beeswax painted) comb foundation. J. E. Lawrence, 326 Clay St., San Francisco, Calif.

THE NATIONAL Beekeepers' Association now buy supplies for their members. Send us your order, enclosing the same money you have to pay others, and we will buy them for you on the co-operative plan. If not a member we reserve the right to retain \$1.50 from the profits on your first order to pay your membership dues and subscription to the Review one year. Sample copy of the Review free. Address, National Beekeepers' Ass'n., Northstar, Mich.

FOR SALE

75 COLONIES of bees for sale. Write Jay C. Davis, Rt. 2, Marshfield, Wis.

HAVE MORE Bees than I can handle, also extra farm for sale. W. T. Bailey, Suffolk, Va.

DOUBLE the honey crop and save half the labor, 25c. Money back if not satisfied. O. N. Baldwin, Baxter Springs, Kan.

FOR SALE—35 strong healthy colonies of bees in 10-frame hives. T. O'Donnell, 815 So. Kildare Ave., Chicago, Ill.

FOR SALE—Empty second-hand cans, two cans to the case; good as new; 25c per case. C. H. W. Weber, 2146 Central Ave., Cincinnati, Ohio.

FOR SALE—15 colonies of bees, all in good hives, with Hoffman frames, at \$5.00 per colony. John Herbert, Hampshire, Ill.

FOR SALE—50 full colonies of pure Italian bees at \$6.00 each, in 8-fr. dov. hives with Hoffman frames. Moore queens of 1913 rearing. No disease. F. A. Gray, Redwood Falls, Minn.

FOR SALE—22 1½-story Danzenbaker hives with brood frames and section holders; practically as good as new, \$1.50 (¼ of price list). 5 1-story, \$1.00. Bees were transferred, combs and frames boiled to melt wax. No disease. Alfred Mottaz, Utica, Ill.

FOR SALE—240 colonies of bees and everything for running three apiaries for extracted honey. Also 120 acres of land in a good location where raspberry, clover, basswood and fall flowers grow. Write for price. E. S. Frost, Rt. 8, St. Louis, Mich.

Closing out sale of bees. Have 50 colonies in 8-frame hives, queen-excluding honey boards, queen and drone traps, Porter bees-escapes, Cowan honey extractor, Doolittle solar wax extractor, supers, and all that is necessary to complete a profitable apiary. If interested, write me. 4Atf S. C. Boyle, Bode, Iowa.

MISCELLANEOUS

ORIGINAL and unique honey advertising post cards (photos). Write Dr. Bonney, Buck Grove, Iowa, for samples.

THE BEEKEEPERS' REVIEW Clubbing List. The Review and American Bee Journal one year \$1.50. The Review and Gleanings one year, \$1.50. All three for one year only \$2.00. Dealers, or those wanting to buy honey, kindly ask for a late number of the Review having a list of 100 producers having honey for sale. Address, The Beekeepers' Review, Northstar, Mich.

American Bee Journal

I GOT 100 pounds of comb honey per colony; my neighbors got none. I'll tell you how for 25c. O. N. Baldwin, Baxter, Kan.

WANTED

WANTED—To buy bees. Give full particulars and price. W. C. Davenport, 2201 Pioneer Road, Evanston, Ill.

WANTED—10 colonies of bees in 10-frame Langstroth hives. E. A. Schmalke, Belmond, Iowa.

SITUATIONS.

WANTED—Young man of good habits to work with bees at once. State wages, age and experience in first letter. M. C. Silsbee, R. D. 3, Cohocton, N. Y.

WANTED—Comb-honey man to help in apiaries, consisting of 1200 colonies. Year around work for right party. State salary and experience in first letter. M. A. Gill, Jr., Hagerman, Ind.

WANTED—Young man, 24, single, good character, inexperienced, wishes to learn modern beekeeping during the coming season. Kindly send proposal. Geo. Schwarzbach, 53 Forest St., Montclair, N. J.

POULTRY

PURE WHITE and Blue Barred Homer Pigeons. Good breeders and mated pairs. J. W. Hopson, Bedford, Iowa.

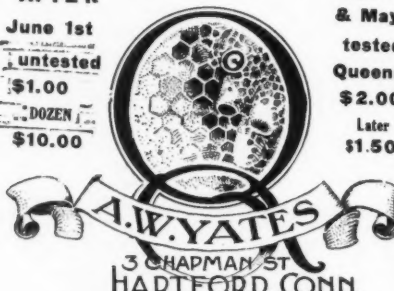
SINGLE COMB Brown Leghorns. Champions of the West. Over 300 prizes won. My quarter of a century record is free. 3A3t C. F. Lang, La Crosse, Wis.

FOR SALE—Single Comb Buff Orpington eggs for hatching, pure bloods; \$1.00 per 15 or \$5.00 per hundred. Satisfaction Guaranteed. W. H. Payne, Hamilton, Ill.

S. C. W. ORPINGTON eggs, 15 for \$3.00; 30 for \$5.00. Direct from Kellerstron, ancestor of "Peggy," the \$10,000 hen. Indian Runner duck eggs, 10c each, white and fawn. I. F. Miller, Brooksville, Pa.

"NUTMEG" ITALIAN QUEENS
Leather-colored, reared by up-to-date methods. Prize winners, red-clover strain. By return mail.

AFTER	April & May
June 1st	tested
untested	Queens
\$1.00	\$2.00
DOZEN	Later
\$10.00	\$1.50



Write for prices by the hundred

QUINN'S QUEENS OF QUALITY

Not coming, but are here to stay. Best bee for any climate. Purest of the pure

GREY CAUCASIANS

Bred strictly in the light of Mendel's Laws of Heredity; no guess, but positive results. The pioneer scientific queen-rearing establishment of America. We lead, others may follow. Every queen guaranteed as to purity of mating.

Special isolated mating station on bald open prairie, not a tree within miles—no chance for gypsy drones.

CHAS. W. QUINN
Box 389 - Beaumont, Texas

HONEY AND BEESWAX

CHICAGO, March 18.—The cold weather of February helped the sale of honey, especially that of comb, so that the market is now practically cleaned up on all grades of comb honey, a situation which 60 days ago was quite unlooked for. Fancy grades are selling at from 14@15c per pound; the off grades are also finding a market with very little being offered. Prices range from 8@13c per pound. Extracted is weak, with the best white clover and basswood bringing from 8@9c per pound, with other white grades from 7@8c per pound. The demand for beeswax has been very active, and brings from 33@35c per pound, according to color and cleanliness. R. A. BURNETT & Co.

DENVER, Mar. 16.—Our local market is well supplied with honey, and our jobbing quotations are as follows: Strictly No. 1 white, per case of 24 sections, \$2.70; choice, \$2.57; No. 2, \$2.43. Extracted, white, 8@9c; light amber, 7@7½c. We are in the market for beeswax, and pay 32c per pound in cash, and 34c in trade delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N., Frank Rauchfuss, Mgr.

KANSAS CITY, Mo., Mar. 18.—The supply of comb honey is still large, demand light. Supply of extracted honey moderate, demand fair. We quote as follows: No. 1 white comb, 24 sections per case, \$3.75 to \$3.85; No. 2, 2.50 to \$2.60. White extracted, per pound, 8@8½c; dark and amber, 7@7½c. Beeswax, per pound, 25@30c.

C. C. CLEMONS PRODUCE COMPANY.

INDIANAPOLIS, March 18.—Fancy white comb honey is being offered here at 16@17c per pound; amber comb at 14@15c. White clover extracted 9@10c in 5-gallon cans. Much comb is being held here, but at this writing there is very little demand. Extracted is in fair demand. Producers are being paid 32c cash for beeswax or 34c in trade. WALTER S. POWDER.

CINCINNATI, March 18.—The demand for honey is somewhat improved from what it was 30 days ago. The stocks are heavy, and hardly think the prices for next season will be as stiff as last season. We continue to sell our fancy comb honey in the wholesale way at \$3.75 a case delivered. Our extracted table honey from 7½@10c a pound; our amber extracted honey from 5½@6½c and 7½c a pound, according to the quality and quantity purchased. For choice bright yellow beeswax we are paying 32c a pound delivered here, and 34c a pound in trade for supplies. THE FRED W. MUTH CO.

NEW YORK, March 20.—We have nothing new to report. While there is as yet some demand for fancy and No. 1 white comb honey, it does not count for much, and other grades which were shipped to us late in the season when the demand was pretty well over, are practically unsalable and we have several lots in-stock which we would rather not have had sent to us at all. If it had been shipped early we could have disposed of it, but now we have it on our hands and would rather not have received it at all. Extracted honey is very quiet. There is some demand for strictly fancy white clover while other grades are neglected. Prices remain about the same as in our last quotations. HILDRETH & SEGELKEN.

BOSTON, March 20.—Fancy and No. 1 white comb, 15@16c per pound. Fancy white extracted in 60-pound cans, 11c per pound. Beeswax, 30c. BLAKE-LEE COMPANY.

LOS ANGELES, March 18.—The market on honey is only nominal. We quote choice light amber in carload lots at 6c per pound. White alfalfa 6½c, and fancy southern California white honey at 8½c per pound. Beeswax, 30@31c f. o. b. California. HAMILTON & MENDRERSON.

Untested ITALIAN QUEEN-BEES

OUR STANDARD-BRED

6 Queens for \$6.00;
3 for \$3.50; 1 for \$1.25

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens purely mated, and all right in every respected. Here is what a few of those who received our Queens have to say about them.

AMERICAN BEE JOURNAL—

Gentlemen:—Last October I purchased three queens of you for my experiments with different queens, and wish to ask you if queens of this season will be of this stock? One of the Queens is the most remarkable queen I ever owned for prolificness, which she transmits to all her daughters. Riddle, Oreg., July 4, 1912.

L. W. WELLS.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is \$1.25, or with the old American Bee Journal for one year, both for \$1.60. Three Queens (without Bee Journal) would be \$3.50, or six for \$6.00. Full instructions for introducing are sent with each Queen, being printed on the underside of the address card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-bred Queens.

American Bee Journal, Hamilton, Illinois.

WANTED Honey!

Extracted and Comb

Will buy or handle on
Commission

Beeswax

Will Pay Highest Price.

Yours very truly,

HILDRETH & SEGELKEN

265-267 Greenwich St., New York, N. Y.

3-BAND LONG-TONGUED RED- CLOVER ITALIAN QUEENS



1912 that he bought 50 more in 1913.

One Untested, 75c; 6, \$4.00; 12, \$7.50; 25, \$13.50; 50, \$25.00

Double the above for tested queens. Bees by the pound: One lb., \$2.00; 2 lbs., \$4.00. One-frame nucleus, \$2.00; 2 frame, \$3.00; 3-frame, \$4.00. To all the above packages add the price of queen. I will begin to send out queens in April.

Positively no checks will be accepted. Send money by P. O. Money Orders. All queens arriving dead will be replaced if cage is returned by return mail.

J. B. ALEXANDER, CATO, ARK.

EXTRACTED HONEY

Just received car New Utah Alfalfa Honey, 8 1-2 cents a pound f. o. b. Kansas City, Mo. **C. C. CLEMONS BEE-SUPP. CO.** Department A, Kansas City, Mo.

MARCHANT'S Three-banded Italian Island-bred Queens

Bred from Selected Mothers

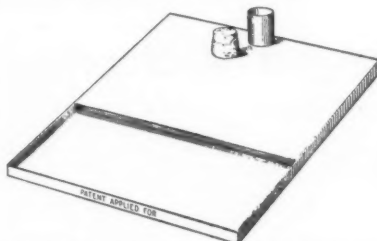
And mated to isolated drones of a different strain. My aim is quality and not quantity. So if you wish any of these choice priceless mated queens, order now or you may not get them, as I am only going to rear a limited number. Free from disease, and your money back if not satisfied. The A. I. Root Co. use my queens, which is proof of their quality. No need to write for a lower price. Reference, the American Exchange Bank of this city. Prices, Untested, \$1.50; 6 for \$6.00; 12 for \$10. In lots of 25 or more, 75c each. Select Tested, \$3.00; Breeders, \$5.00 and \$10.

A. B. MARCHANT

Apalachicola, - Florida

The Opfer Hive-Entrance Bee-Feeder.—Some of the many good points of the Entrance Feeder are these:

1. It is made of heavy galvanized iron and will last a life-time.
2. It reduces the hive-entrance.
3. It reaches where the bees can get at the feed even in cool weather.
4. It feeds the right amount.
5. It will not cause robbing.
6. It will not disturb the colony while feeding.
7. It permits quick work.
8. The bees will not drown in it.



I am in a position to furnish all demands for these feeders at the following prices, f. o. b. Chicago: One for 20c; 5 for 18c each; 10 for 16c each. If ordered by mail, add 10c each for packing and postage.

Address all orders to—**A. H. OFFER,**
6259 Patterson Ave., Chicago, Ill.

Dixie Swarms

Direct to You in April

Stop and think for half a minute what a small package of bees or nuclei would do if put on those unoccupied combs early in the spring. The cost is just a drop in the bucket, and your 1914 honey crop may be doubled. Bees by the pound. Queens and nuclei shipped during April. Carefully selected stock. Excellent express and mail service. **Prices low.** Save money by writing at once, for our price-list and estimate on your order.

CONNEAUT LAKE BEE COMPANY

Meldrim, Georgia

ITALIAN QUEENS

Try Murry's Strain of 3-Banded Italian Queens

Best stock obtainable at any price. 18 years' experience as a queen-breeder. Satisfaction guaranteed or money refunded. 550 nuclei, besides 11 apiaries to draw from. Write for booklet, free. Tested queens in March. Untested in April.

Prices before May 10th:

Untested, 75 cts. straight; Tested, \$1.00 each, \$90.00 per 100.

After May 10th:

Untested, one for 70 cts.; 5 for \$4.00; 100 for \$65.00. Tested, one for \$1.00; 6 for \$5.00; 100 for \$80.00. Select Tested, \$1.50. Breeders, \$5.00.

Bees by the pound: One pound, \$2.00; 10 pounds, \$18.50; 100 pounds, \$180.00.

Better let me book your orders now, for bees or queens in quantities. No disease.

H. D. MURRY, Mathis, Texas



Buy Carniolans in Carniola

Pure Carniolan Alpine Bees

Write in English for Book-

let and pricelist. Awarded 60

Honors

Johann Sirgar, Wittnach

P. O. Wocheiner-Feistritz

Upper - Carniola (Krain), Austria

ITALIAN BEES



Choice Home-bred Queens Reared
In strong colonies.

PRICES FOR APRIL

One Tested Queen.....\$2.00
Select Tested.....2.05
Breeder.....4.00
Comb Nucleus—no
Queen.....\$1.75

Safe arrival guaranteed.

For description of each grade of
queens send for FREE catalog.

J. L. STRONG,

Clarinda, - - Iowa

Three-Band Italian Queens For 1914



I will again have for sale, after April 1st, young queens reared from my best Leather-Colored Breeders. You will make sure of improving your stock and securing a crop of honey if you introduce some of these queens. The Leather-Colored Italians are recommended and used by the largest and most progressive bee-men of today.

Untested, \$1.00 each; \$9.00 per doz., \$75 per hundred. Select Tested, \$1.50 each.

C. S. ENGLE, Beeville, Bee Co., Texas

Q-U-E-E-N-S

The Old Reliable 3-Band Stock



My queens are reared from imported stock which makes a beautiful bee. They are fine honey-gatherers, and very gentle. Try my queens. Send me your order, and if not satisfied will return your money. Safe arrival

guaranteed. Untested Italian, 1, 75c; 6 \$4.25; 12, \$8.00.

N. FOREHAND, R. F. D. 2, Brewton, Ala.

QUEENS Pure leather-colored Italians bred in isolated location; mated to drones of a heavy storing strain; cannot be beat for comb honey; cap white; enter supers readily, with little inclination to swarm.

Queens are reared under best possible conditions. Will begin mating about June 15th. Get your orders in early, as the greatest rush is always at the opening of the season. Orders promptly filled. Safe delivery and satisfaction guaranteed. Prices: One, 85c; 6 for \$4.50; per doz., \$8.00. No foulbrood. Send for circular.

D. G. LITTLE, HARTLEY, IOWA

ARCHDEKIN'S FINE ITALIAN QUEENS

Three-banded. Bred for persistent profitable production of honey. Prolific, hardy, gentle. The bee for pleasure or profit. One customer says, "Your queen soon had her 10 frames running over with bees that are hustlers. No disease. Satisfaction guaranteed. Orders filled promptly. Ready May 20. Untested, \$1.00 each; 6 for \$5.50; doz., \$10.

Select tested, \$2 each.

J. F. Archdekin, R. R. 7, St. Joseph, Mo.

Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years in deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority

JANUARY 1—Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in honey-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in

attics, or roofs, and in back lots. We also have a true story of a beekeeper in a city who was fined \$100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL—Breeding.—Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.

—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1—Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, \$1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

New 64-Page Catalog

Our new 1914 catalog contains double the pages of former editions, and requires extra postage. It is filled from cover to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experienced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so orders may be filled with our usual promptness. Write us your needs. Early-order discount this month 2 percent.

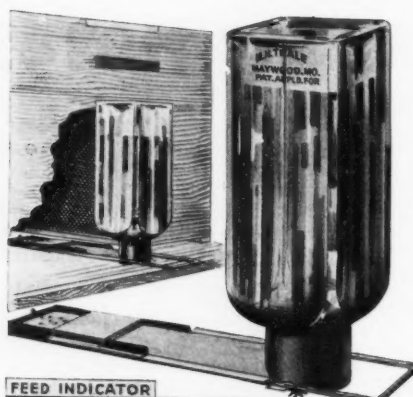
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American Bee Journal



THALE'S REGULATIVE VACUUM BEE-FEEDER

Places wherever it has been given a trial. After mailing out several thousand sample feeders, we have received hundreds of orders like the one given below:

H. H. THALE, Maywood, Mo.—*Dear Sir:*—I rec'd the sample bee-feeder O. K., and think I will like it fine. Ship me 250 feeders complete and 25 extra bottles. Enclosed find check in settlement for same. This is quite a bee-country, but the main drawback has been that they don't get strong quite early enough to take proper advantage of the earliest clover blossoms. Now, if you would like an agent in this part of the country, I'm sure I can make some heavy sales for you, as I am acquainted with beekeepers owning from 1000 to 15000 colonies. Please let me hear from you at once. Respectfully, D. B. HERSPERGER.

I want every beekeeper and queen-breeder in the U. S. to try this feeder this season. Send 55c for sample feeder, postpaid, today. This is one of the biggest money makers for the beekeeper. Over 42,000 are now in use. I want over 100,000 of these feeders in use by June 1. I will ship you as many bee-feeders as you need on ten days' free trial in your own apiary, and if these feeders do not work as represented you may return them to me at my expense, and your money will be refunded. If no money is sent, fill in and cut out Free Trial offer below and mail to me today. Address, Free Trial Dept., A 94.

TERMS, CASH WITH ORDER

Sample feeder, with two bottles, complete by mail postpaid 55c	All orders over ten feeders each only 30c
Ten feeders, complete with one bottle, by freight or exp. each 35c	Extra bottles with cork valve, each 10c

H. H. THALE, Inventor and Manufacturer Box A 25, Maywood, Missouri

Eastern buyers send orders to Earl M. Nichols, Lyonsville, Mass., and B. H. Masters, Edison, Ohio.
Western buyers send orders to D. B. Hersperger, Ordway, Colo.

TEN DAYS' FREE TRIAL ORDER

Please send by..... Freight, Parcel Post (send postage), Express
Post-office..... R. R. Station..... State.....
Send at once (number of feeders)..... feeders on ten days' free trial. Title of feeders to remain with
H. H. THALE, of MAYWOOD, MO., until payment in full is made or feeders returned.
How many colonies have you?..... Annual crop..... pounds.
Produce comb or extracted?..... Sign.....

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THE WESTERN HONEY BEE

A new magazine owned and run by the bee-keepers, filled with Western life as depicted by the best talent on bee topics obtainable. Special department on crop and market conditions during season.

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Classified, 15c a line

Write for particulars

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Small and large red, alfalfa, white and yellow sweet clover seed, timothy, blue grass, rape, millet, etc. Also seed corn.

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SUPERIOR GOLDEN QUEENS

Untested, \$1.00; 6, \$5.00; 12, \$9. Select Untested, \$1.25; 6, \$6, 12, \$10. Prices on application for tested and untested queens by the hundred. Address,
T. S. HALL, Talking Rock, Ga.





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MARSHFIELD GOODS

BEE-KEEPERS:—

We manufacture Millions of **Sections** every year that are as good as the best. The **CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**

Our Catalog is free for the asking.

Marshfield Mfg. Co.,

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Beekeepers' Supplies and Fruit Packages

We manufacture the famous Sheboygan Hive, which always gives absolute satisfaction. Our perfect sections, made from selected white basswood, are recognized as the best on the market.

Catalog now ready for distribution. Write for copy.

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Is the **Comb Foundation** made to suit the **Honey Bee.**

It's the **Comb Foundation** that helps produce the **full capacity honey crop.**

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Ask for more information; also prices and **FULL DISCOUNT** on all Bee-Supplies.

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Perfect sections from young, white, basswood. White Pine Hives and Supers, Excellent Shipping-Cases, Brood-Frames, Separators, etc.

We invite your correspondence.

Guarantee—All goods guaranteed perfect in workmanship and material or money cheerfully refunded.

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FOR
THE
BEST

Early QUEENS



Send me your address for Italians and Carniolans. I BEGIN mailing Queens early in March. Untested, 75 cts. each. Tested, \$1.25 each. Circular free.

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PHARR WANTS YOUR ORDERS FOR QUEENS



Goldens and 3-Banded Italians

For twelve years we have asked for your orders and we have gotten all we could fill and sometimes more. But we have ever tried to serve you right, and will guarantee similar treatment in the future. Prices of Untested, \$1.00; Tested, \$1.50; Breeders, 3.00 to \$5.00. Write for prices in large quantities.

2-frame Nuclei, queenless, \$2.25 All
3 " colonies with queen 3.25 F. O. B.
10 " colonies with queen 8.00 Berclair.

Orders booked now—delivery last of May or June

John W. Pharr, Berclair, Texas

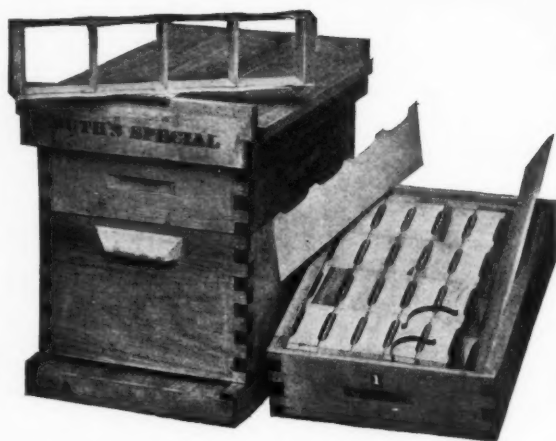
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Carniolans are excellent winterers, build up rapidly in the spring, are very gentle, very prolific, cap their combs very white, enter supers readily, and keep their colonies strong at all times. Write for our free paper, "Superiority of the Carniolan Bee," explaining more fully, giving briefly best systems of management. Untested queens, \$1.00 each; doz., \$6.00. Full colony with tested queen, 8-fr. dove, or Danz. 10-fr., \$10. in April.

ALBERT G. HANN, Pittstown, New Jersey
Carniolan Queen-Breeder.

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"Now, Then—Let's Talk Business"



SOON, you will need many additional Bee Supplies for the new season—Hives, Brood-frames, Comb Foundation, Honey-boards, Smokers, Bee-veils, Brushes, and whatnot. It is not too early to get your mind on this subject right now. Send for our new 1914 catalog—just off the press. A post card will do. It tells all about—

THE MUTH SPECIAL Dovetailed Hive

This Hive has several remarkable features. The cover and bottom boards are of $\frac{3}{4}$ -inch material so rigidly constructed as to be absolutely warp proof. Besides this extra efficiency we have added a Honey-board directly under the cover, forming a dead-air space which excludes both cold and heat, making this the best wintering Hive on the market today, and far superior to others in summer. The boiling sun has no effect on the interior of this Hive, which is always comfortably cool, and prevents the comb from melting down. Another feature: When you take off the honey simply slide the Honey-board between the brood-chamber and the super, and the bees will clear out of the super by way of the Bee-escape. Price same as for the ordinary Hive.

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204 Walnut St.

"The Busy Bee Men"

Cincinnati, Ohio

P.S. Send us your old comb and cappings for rendering by our high pressure hydraulic press. It gets the last drop from the slumgum. Means money to you. Write at once for particulars.

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